Urban Transportation In Alberta

1984

Alberta
TRANSPORTATION

85-1548/

Letter from the Minister

The objective of the Urban Transportation Program is to assist Alberta's cities in providing an efficient, effective and balanced transportation network that encourages and supports the economic growth of Alberta, while at the same time improves and promotes the quality of community life.

While assistance is provided for both roadways and public transit, two key programs are highlighted in this report. The Major Continuous Corridor Program is now complete in five cities and nearing completion in two others, with a total expenditure of more than $260 million since 1979. The Light Rail Transit projects in Calgary and Edmonton have received $229 million in provincial assistance over the six-year period. Approximately $930 million in provincial funds has been committed to Urban Transportation projects during the last six years.

The staff of the Urban Transportation Branch perform an important role in administering these programs and assisting the thirteen cities of Alberta to meet the unique transportation needs of their residents and the travelling public.

By working together with the communities, councils and administration in a partnership approach, the goals of Urban Transportation can be met for the betterment of all Albertans.

Marv Moore

Marvin E. Moore
Minister of Transportation

Preface

This report updates and expands on the urban transportation information in the original "Urban Transportation in Alberta," published three years ago. Here, in one publication, information from many different sources has been brought together to give legislators, administrators, researchers and interested citizens an overall picture of current and past urban transportation activity in the Province of Alberta.

Primary responsibility for the content and form rests with the staff of the Urban Transportation Branch.

Alberta Transportation appreciates the co-operation of the cities whose assistance in obtaining necessary information was essential.

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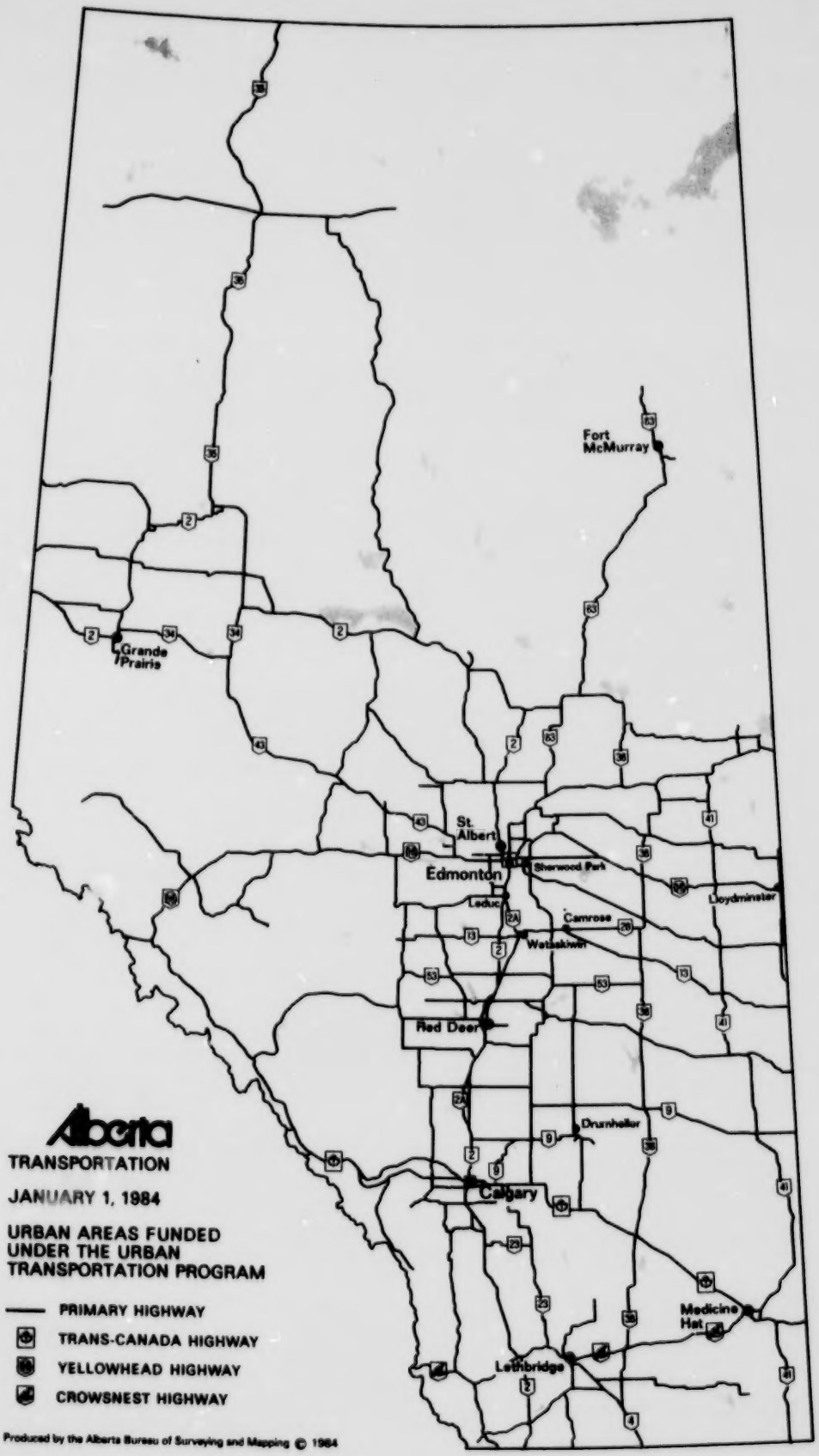

Fort McMurray
Grande Prairie
St. Albert
Edmonton
Sherwood Park
Leduc
Camrose
Lloydminster
Wetaskiwin
Red Deer
Drumheller
Calgary
Medicine Hat
Lethbridge
Alberta
TRANSPORTATION
JANUARY 1, 1984
URBAN AREAS FUNDED UNDER THE URBAN TRANSPORTATION PROGRAM
PRIMARY HIGHWAY
TRANS-CANADA HIGHWAY
YELLOWHEAD HIGHWAY
CROWSNEST HIGHWAY
Produced by the Alberta Bureau of Surveying and Mapping © 1984

Goals and Contents

This report is the second edition of Urban Transportation in Alberta. Its purpose is to provide a prime source of information on urban transportation in this province for interested parties, both in Alberta and elsewhere in Canada.

It contains information on the planning, funding, and operation of each city's urban transportation infrastructure, on urban roads, on transit, on the relationship between economic and transport system development and on several other topics.

The report is divided into four sections. Section One includes a description of Alberta's Urban Transportation Program. It also provides some information on the role of the Urban Transportation Branch and on urban transportation legislation.

Section Two describes urban transportation facilities and services in each of Alberta's thirteen incorporated cities and in Sherwood Park, a residential community close to Edmonton's east city boundary. Each city section includes a funding table for the period 1979/80 - 1984/85 indicating the level of assistance provided to the city under the Alberta Urban Transportation Program.

Section Three provides the reader with more detailed information on specific urban transportation topics. Section Four includes a glossary of urban transportation terms and sources of information used within this report.

Section One: The Alberta Urban Transportation Program 1979/80 - 1984/85

Background of the Current Provincial Program

On January 10, 1979 the Province of Alberta announced a six-year program of financial assistance to cities and major urban areas for the development of their respective urban transportation systems and facilities. Approximately $750 million was committed under the Alberta Urban Transportation Program for the six-year period to end March 31, 1985. This new program came into effect on April 1, 1979, one year prior to the expiration of the former six-year Alberta Urban Transportation Policy.

The province has periodically reviewed the level of its financial commitment in this area with the result that it has significantly increased its expenditures on urban transportation since the program's inception.

The total value of the program is now estimated at $930 million. The increase of $174 million since 1979 has been brought about by three main factors:

(1) Fort McMurray's and Leduc's adoption of city status;

(2) The 1980 Adequacy Review which adjusted funding for 1981/82 and 1982/83 (to account for inflation and population increases); and,

(3) Increased funding for existing Major Continuous Corridor projects and the initiation of additional ones.

Municipal Funding Eligibility

The Urban Transportation Program is primarily intended to financially assist incorporated cities. The single exception to this requirement is the capital and operating assistance funding provided to the County of Strathcona for use in the provision of Sherwood Park's transit system.* Sherwood Park, a residential community of approximately 30,000 is immediately east of Edmonton within the County of Strathcona. It also receives assistance for research and development projects under the Alberta Urban Transportation Program.

Presently thirteen incorporated cities and one major urban area are eligible for funding under the program. These include:

Calgary
Camrose
Drumheller
Edmonton
Fort McMurray
Grande Prairie
County of Strathcona *(Sherwood Park)*
Leduc
Lethbridge
Lloydminster
Medicine Hat
Red Deer
St. Albert
Wetaskiwin

When other urban municipalities are incorporated as cities, they become eligible for funding under the Urban Transportation Program, subject to the requirements specified in The City Transportation Act and any regulation made thereto.

Urban Transportation Program

There are nine grant programs. These are divided into Conditional Grant, Unconditional Grant, and Project Programs. These divisions are designated to facilitate effective utilization of funds provided under the various component programs. Details follow.

Conditional Grant Programs

Five programs are administered under the terms of conditional grant agreements. These agreements enable the province to advance funds to each city for urban transportation projects accepted by the department.

A single conditional grant agreement covers three of the six programs, specifically:

(1) Arterial Roadway Capital

(2) Public Transit Capital

(3) Transportation Systems Management

* *(Edmonton Transit operates the service under contract)*

Funds provided under the Alberta Urban Transportation Program to the cities for these three programs may only be spent on approved projects. Total expenditure of such funds may not exceed each city's maximum annual allocation.

The use of a single agreement covering all three programs allows the cities to transfer funds between programs to meet their individual needs. Funds transferred from one program to another must be utilized in accordance with the administrative procedures of the program to which they were transferred. Funds may *not* be transferred out of these three programs to other programs.

Separate conditional agreements are in effect for each of the following:

(4) Major Continuous Corridors

(5) Railway/Highway Grade Separation Structure

Major Continuous Corridor projects are all covered by comprehensive multi-year province/city agreements. These agreements delineate responsibilities and expenditure sharing between province and city for the individual projects.

Following a provincial needs assessment, Railway/Highway Grade Separation Structure funds are allocated annually to projects conceived in accordance with Canadian Transportation Commission Guidelines.

Funds are not transferable between or out of these three programs.

Unconditional Grant Programs

Two programs provide *unconditional* funds, e.g. the city is free to expend the grant according to its own priorities and/or objectives. They are:

(6) Grants in Lieu of Public Transit Operating

(7) Primary Highway Maintenance Grant

Project Programs

(8) Research and Development funds are made available to each eligible municipality on a project-by-project basis. The Urban Transportation Branch must approve individual research projects, and will also take the lead in research, under the Research and Development Program where such projects are deemed to be of high multi-jurisdictional value.

(9) Urban Signing Project funds were allocated to cities in the province in 1981/82 and 1982/83 and must be expended by the end of fiscal year 1984/85, under the terms of a separate province/city agreement.

More specific details of these nine programs are available in Alberta Transportation's Urban Transportation Program - Administrative Procedures Manual (September, 1982).

Program Objectives

The purpose of each program is briefly described below.

(1) *Arterial Roadway Capital* — Financially assist in developing major arterial roadways that are extentions of or support the primary highway system.

(2) *Public Transit Capital* — Assist municipalities in the provision of cost-effective public transit services.

(3) *Transportation Systems Management* — Promotes and financially assists in spot improvements which aid in the implementation of effective and safe transportation systems.

(4) *Major Continuous Corridors* — Promotes the construction and continuous routing of one primary highway route through each city.

(5) *Railway/Highway Grade Separation Structure* — Assists in the development of railway/highway grade separation structures which promote greater urban transportation safety.

(6) *Grants in Lieu of Public Transit Operating* — Provides unconditional grants towards public transit operating costs; includes the provincial contribution to disabled and/or senior citizen transit services.

(7) *Primary Highway Maintenance Grant* — Provides unconditional grants towards the maintenance of provincial primary highway routes within the cities.

(8) *Research and Development* — Assists in conducting research activities to provide more efficient urban transportation.

(9) *Urban Signing Project* — To aid uniformity and systemization of guide signing and clarity of routing in urban areas.

Tables one and two summarize provincial expenditures under the Alberta Urban Transportation Program over the six year period 1979/80 to 1984/85.

Table 1

Urban Transportation Assistance Program
Six Year Program Budget for Cities and Major Urban Areas *(in "000's")*

Program	1979/80 *(Actual)*	1980/81 *(Actual)*	1981/82 *(Actual)*	1982/83 *(Actual)*	1983/84 *(Actual)*	1984/85 *(Projected)*	Total Six Years *(Estimated)*
1. Arterial Roadways Capital	$27,000	$30,747	$38,430	$47,699	$42,096	$48,516	**$234,488**
2. Public Transit Capital	27,064	36,449	42,664	48,210	49,039	55,802	**259,228**
3. Transportation Systems Management	1,500	2,533	3,079	3,479	3,479	3,417	**17,487**
4. Major Continuous Corridors	36,500	41,826	44,898	81,127	45,740	26,000	**276,091**
5. Rwy/Hwy Grade Separations	7,500	7,500	7,500	7,500	4,405	654 (A)	**35,059+**
6. Public Transit Operating (B)	9,815	11,172	13,885	15,356	16,098	16,222	**82,548**
7. Primary Highway Maintenance	1,557	1,784	2,405	3,087	2,921	2,682	**14,436**
8. Research & Development (C)	1,096	680	1,475	999	1,232	1,500	**6,982**
9. Urban Signing Project	N/A	14	600	2,000	N/A	N/A	**2,614**
Total	**$112,032**	**$132,705**	**$154,936**	**$209,457**	**$165,010**	**$154,793+**	**$928,933+**

(A) To date, total Grade Separation funding to be provided in 1984/85 is not yet determined, as it is dependent on the rate that projects are approved.

(B) Includes funding for other towns and villages.

(C) Includes funding for in-house projects.

Table 2

Urban Transportation Assistance Program
Six Years Allocations to Cities (1979/80 - 1984/85) *(In 000's $)*

	Arterial Roadways	Public Transit Capital	Transportation Systems Management	Major Cont. Corridors	Rwy/Hwy Grade Separations	Urban Signing	Public Transit Operating	Primary Highway Maintenance	Research & Development	Total
Edmonton	$73,036	$120,175	$6,847	$53,500+	$17,818+	$859	$28,582	$5,282	$1,982	**$308,081+**
Calgary	71,736	122,675	6,847	103,500	14,026+	1,103	31,869	5,793	1,885	**359,434+**
Lethbridge	18,032	3,000	848	56,000	0	83	2,970	789	106	**81,828**
Red Deer	17,683	2,202	624	0	0	74	2,457	493	226	**23,759**
Medicine Hat	11,900	2,053	565	24,660	0	126	2,133	613	63	**42,113**
St. Albert	10,704	2,575	472	19,530	0	54	1,709	217	64	**35,325**
Fort McMurray	7,867	1,275	374	0	0	118	1,474	N/A	162	**11,270**
Grande Prairie	7,958	1,085	329	0	0	92	1,040	314	86	**10,904**
Camrose	4,979	510	183	0	3,215	22	148	229	65	**9,351**
Wetaskiwin	2,992	390	140	2,090	0	33	113	281	24	**6,063**
Lloydminster	5,104	330	119	0	0	34	104	253	26	**5,970**
Drumheller	1,742	300	104	3,510	0	17	77	154	58	**5,962**
Leduc (A)	755	83	35	0	0	0	25	19	2	**919**
Sherwood Park	0	2,575	0	0	0	0	1,544	0	44	**4,163**
In-house									2,075	**2,075**
Other Towns							8,306			**8,306**
Unspecified				13,300 (B)	(C)				111	**13,411**
Total	**$234,488**	**$259,228**	**$17,487**	**$276,090**	**$35,059+**	**$2,615**	**$82,551**	**$14,437**	**$6,979**	**$928,934+**

(A) 1984/85 is Leduc's first year to be funded under this program.

(B) To date, all corridor funding allocations to be provided in 1984/85 are not yet determined, as they are dependent on the rate that ongoing Corridor projects proceed.

(C) Grade Separation funding review for 1984/85 is not totally completed, therefore additional funds may yet be allocated under this program.

NOTE: The amounts indicated above reflect actual funds provided for 1979/80 to 1983/84 and estimates for 1984/85.

The "+" symbol indicates that additional monies may or will be allocated.

The Role of the Urban Transportation Branch

The Urban Transportation Branch is part of the Urban Transportation and Planning Division of Alberta Transportation. The programs under its administration were designed to meet a number of provincial objectives, both general and specific.

General objectives of the provincial Urban Transportation Program are, first, to encourage and facilitate dynamic, balanced and diversified economic and social development throughout the whole of the province and second, to provide assistance to urban communities on an equitable basis to maintain and enrich the quality of life for all Albertans.

More specific objectives are listed below.

1. Participate with cities in the planning and financial responsibility for those elements of the urban transportation system which are properly a mutual concern as a vital link in a total provincial transportation system.
2. Promote long term planning and implementation of cost-effective balanced urban transportation systems, having a proper regard for equity, efficiency, safety and environmental factors.
3. Respond to urban needs and facilitate dynamic, balanced and diversified economic and social development throughout the whole of the province by providing financially sound provincial support for urban transportation.

Legislation

Introduction

Relevant to urban transportation in the Province of Alberta are the laws of Canada and of Alberta and the bylaws of the cities. In Canada, urban transportation is fundamentally the responsibility of the provincial, not federal government. Within this decentralized system, the individual provinces establish their own urban transportation priorities and provide virtually all of the senior government financial and technical assistance received by each city. This is in contrast to the United States, where the funding of urban transportation activities is essentially under the control of the Federal Department of Transportation.

Transportation funding from the Alberta Government to cities in the province is administered by the Urban Transportation Branch of Alberta Transportation. Below are precis of the provincial and federal acts under which the provincial government provides funding to individual cities.

The urban transportation assistance policies of the provincial government are periodically reviewed, which may lead to changes in the administrative process and, when appropriate, in the programs.

Alberta Transportation legislation, notably the City Transportation Act, contains features and supports programs which differ either in magnitude or in emphasis from those in other provinces.

Provincial Acts and Regulations

The Provincial Acts and Regulations of the Alberta Legislative Assembly relevant to urban transportation include the City Transportation Act and Regulations, the Department of Transportation Act and Regulations, the Public Highways Development Act and the Planning Act. The key features of each follow.

City Transportation Act and Regulations Thereto

In part, this act enables a city to establish a transportation system, to enter into agreement with the Minister of Transportation with respect to cost sharing in the implementation of the system, and to control adjacent development and access to the transportation system.

The regulation under this act prescribes the terms and conditions by which the Minister approves the provision of financial capital assistance toward projects forming part of the transportation system.

In addition to this formal regulation, cities are also required to comply with the Urban Transportation Branch's Manual of Administrative Procedures for the Alberta Urban Transportation Program.

The Department of Transportation Act and Grant Regulation Thereto

In part, this act establishes the authority of the Minister to make grants. It specifies the conditions under which these grants will be made, for what purposes they may be made and the form in which applications for grants will be made.

The Public Highway Development Act

Although the owner of property abutting an arterial roadway normally has right to access from roadways, that access does not necessarily mean direct access between the roadway and the abutting property. Under the Public Highway Development Act, city governments may choose to designate certain roads as controlled thoroughfares, and make bylaws which control access to and from such roads. The City Transportation Act grants the cities a similar authority.

The Planning Act

This act gives cities the authority for subdivision regulation, including right of way dedication, to facilitate any planned future construction or reconstruction of roadways or other facilities.

City Bylaws

City bylaws applicable to urban transportation complement the provincial legislation and set the legal framework for provincial funding under the Alberta Urban Transportation Program.

Under the City Transportation Act of 1980, all cities in Alberta must prepare and periodically update a city transportation plan and prepare a bylaw in accordance with this plan.

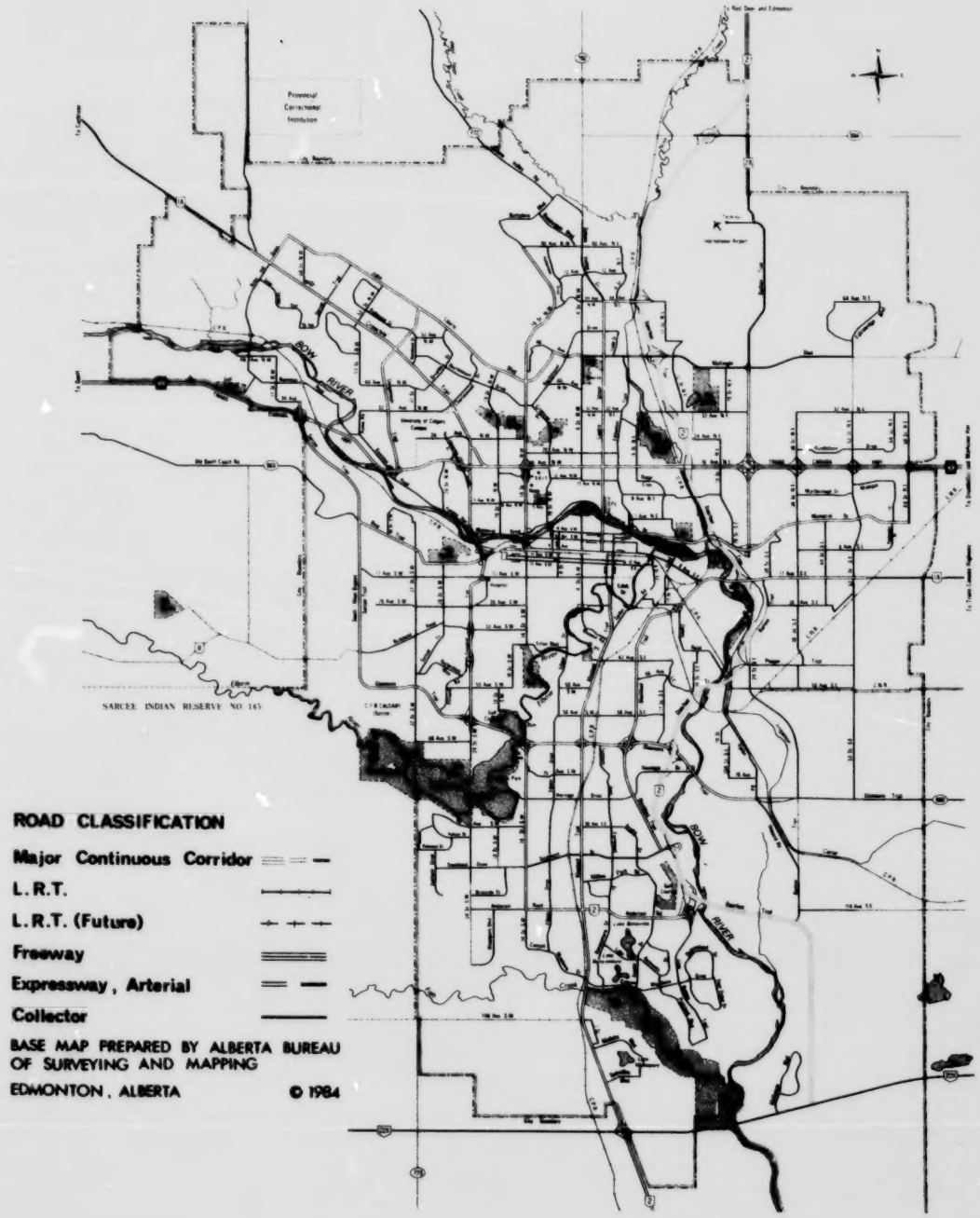
Each city's transportation system bylaw must include a schedule providing the physical description of each cost-shareable roadway and/or LRT line by name and limits, and a map showing the approximate location of the transportation facilities forming the city's transportation system. To be funded under the Alberta Urban Transportation Programs, a transportation facility must be incorporated in the city's transportation system bylaw.

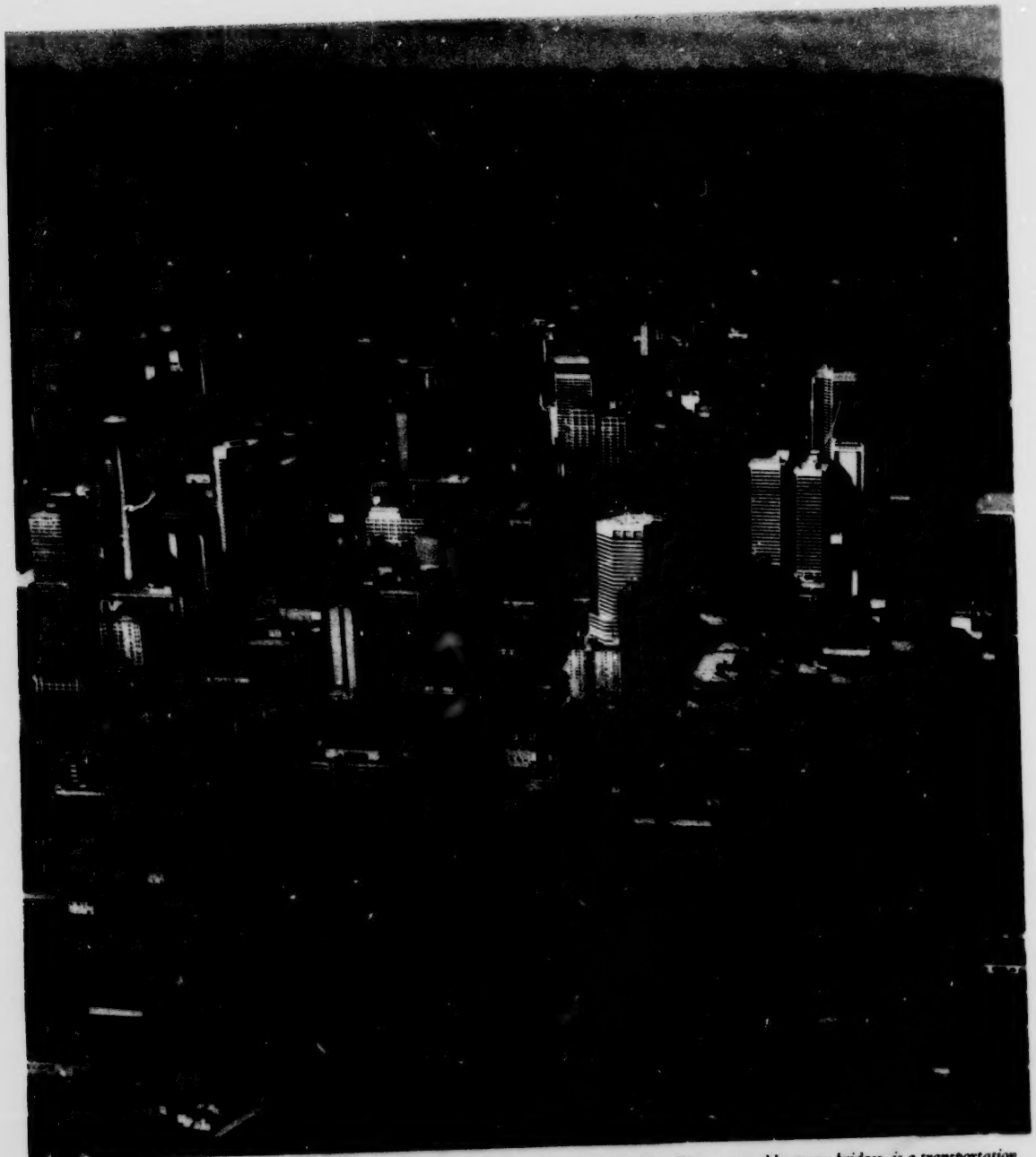
The cities enact other bylaws to control on-street parking, loading zones, truck routes, dangerous goods routes and other urban transportation related matters.

Section Two: Introduction to City Section

The following section describes the urban areas funded under the Alberta Urban Transportation Program, providing some general information on the location, economic activities, roads and traffic, transit, transportation planning and arterial roadway upgrading. Each entry includes a table indicating the levels of assistance provided under each program to the individual urban area. The most recent statistics available on the city's transit property and on general transportation related topics are also included. The sources and dates of data used are listed on page 99 of this report.

City of Calgary





LRT lines and major arterial roadways radiate outwards from Calgary's urban core. The Bow River, crossed by many bridges, is a transportation barrier running through the centre of the city.

Credit: City of Calgary.

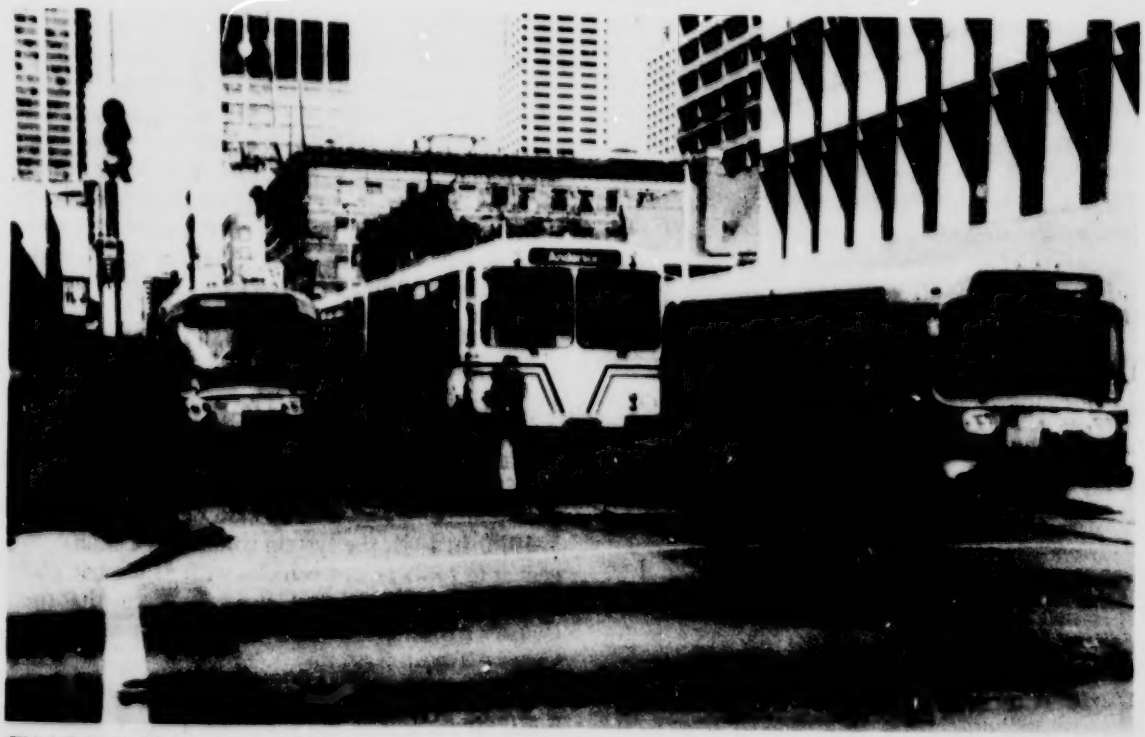
Economic Activities

Calgary is the Canadian city most associated with the oil industry national headquarters. Among such companies are Dome Petroleum, Gulf Canada Resources, Imperial Oil Ltd, and most recently Shell. These and other energy companies have been the cornerstone of Calgary's economic growth, but today the city is encouraging diversification and new industries to lead future development. Employers like Northern Telecom, Revelstoke, Atco, and Pacific Western Airlines are all making Calgary a major service and manufacturing centre for the prairies and for Canada. The banking, electrical product, rubber and plastics, transportation equipment, metal fabricating, paper and wood product industries are key employers in Calgary.

The Canadian Pacific Railway shops and the city's new LRT maintenance shop have unique experience and capabilities. Calgary industries and businesses are becoming more productive to ensure their future economic health and to allow adjustment to the new business environment of the 80's. Calgary is host city for the 1988 Winter Olympics.

Location

Calgary, in the southwest of the province, is situated at the junction of the Bow and the Elbow rivers. The Trans-Canada Highway, southern Alberta's main east-west route, passes through the city as does Highway 2, the main north-south corridor in the province running between Dawson Creek, British Columbia and Carway on the American border.



This is Calgary's 7th Ave. transit-mall. In the morning and the evening rush hours, three-car LRT trains running every five minutes, and up to 75 buses per hour travel along this downtown thoroughfare.

Transportation Facts

General	
Population	620,692
Area *(acres)*	124,080
Density *(people per acre)*	5.02

Roadways	
Major Continuous Corridors *(km)*	35
Arterials *(km)*	336
Local and Collector Roads *(km)*	2,484
Alley Ways *(km)*	1,248
Passenger Vehicles Registered	476,195

Transit	
LRT Vehicles	27
Buses/Trolleys	758
Routes	82
Revenue Passengers	53,807,821
Revenue Vehicle *(km)*	26,999,921
Revenue Vehicle *(hrs.)*	1,381,801
Available seats	40,472
No. of Employees	1,698
Fuel Consumption *(L)*	15,285,557
Power Consumption *(kwh)*	7,573,000
Local Fare	0.85
Cost per passenger	1.36
Operating Revenue	34,749,775
Operating Cost	69,771,775
Revenue/Cost ratio	0.50

See page 99 for dates and sources of data.

Transportation Planning

Since 1981, Calgary has continued development of its LRT system, adopted a new transportation system bylaw, and has improved a number of its existing arterial roadways.

The Order-in-Council for their new transportation system bylaw (#3M82) was granted on October 6, 1982. This bylaw was developed by synthesizing the results of a number of road and transit studies, undertaken with reference to the city's General Municipal Plan and land use projections. It indicates existing and new arterial roads, LRT alignments and shows the status of roads in newly subdivided and in annexed areas. The new bylaw is being monitored by the city and will be periodically updated as new and more detailed area plans are developed.

With its Major Continuous Corridor, the Deerfoot Trail , now in place, the City is directing the majority of its available funding to the development of its LRT system. Work is already well advanced on the Northeast LRT alignment and orders for additional LRT vehicles have been placed. The city will eventually have a radial LRT network, centred on the central business district. Lines serving the northwest and the west of Calgary are envisaged as is an extension of the existing South line to Midnapore (see page 81).

Transit

Calgary Transit was first started in 1909 as a municipal street railway. The original system comprised two streetcars and a short street rail line operating between 8th Avenue at 1st Street West and Stampede Park. The street railway reached a peak total of 70 cars with 115 km of track by July 5, 1915. In 1951, the system completed a changeover to rubber-tired vehicles with 81 electric and 50 motor buses in its fleet. It was that year that the Calgary Municipal Railway changed its name to Calgary Transit System.

Currently, less than 10% of Calgary Transit buses are more than ten years old, a figure well below the average age of transit vehicles in other centres.

Calgary Transit operates a limited express system on its Blue Arrow routes between 0600 and 1800 on weekdays. The Blue Arrow service is supplemented by Pennant Express buses during peak hours in areas that are not served by Blue Arrow.

The Calgary LRT system, locally referred to as the "C-Train," operates on a separate right-of-way along the 12.5 km route, between Anderson Road in the south and 7th Avenue in downtown Calgary. The C-Train is fare free in the downtown area, providing easy access to offices and stores. There are seven stations built along the route south of downtown providing stimulus to commercial and high-density residential redevelopment in their immediate area. As of November 1983, the South line carried approximately 42,000 persons daily including 28,000 to and from the downtown area.

Construction of Calgary's second LRT line has commenced along the northeast corridor. It will service northeast Calgary, running from 7th Avenue and 3rd Street S.E. to Memorial Drive, then east along Memorial Drive to 36th Street .E. The line will then proceed north along 36th Street to 39 Avenue N.E. This line is expected to be in operation by the summer of 1985.

Roadways

In December 1982, Calgary opened the final stage of the Deerfoot Trail, a major north-south freeway which extends from the north to the south city limits. This roadway was funded under the Major Continuous Corridor Program and represents the largest single investment in an urban roadway in Alberta. Over the past two years, the city Engineering Department has upgraded many of its arterial roadways. A partial list of these improvements appears below. Not included in the listing is design work and functional planning which, though invisible to the general public, make up one of the most important parts of program funded activities.

Under the Transportation Systems Management Program, the city has also undertaken smaller roadway projects such as signalization of intersections, median improvements, building left-turn bays, bus bays, improved signing and other similar projects. The Railway/Highway Grade Separation Structure Assistance Program provided the city with funding for grade separating the Canadian Pacific Railway crossing of the Barlow Trail and for other grade separation projects in the city.

By acting to divert commuters from cars to transit, the city is moving to restrain downtown traffic congestion. The "Plus-15" pedestrian overpasses and the city's downtown parking policies also benefit downtown traffic flow.

Arterial Roadways Construction and Upgrading

PROJECT	LIMITS	YEARS
1. Glenmore Trail	14 Street S.W. interchange	1979, 1980, 1981, 1982, 1983
	Crowchild Trail interchange	1980
2. Crowchild Trail	Shaganappi Trail to west city limits	1978, 1979, 1980
	Glenmore Trail interchange	1981, 1982
	17 Avenue S.W. to 36 Avenue S.W.	1981, 1982, 1983
	Bow River Bridge to University Drive	1982
3. MacLeod Trail	Anderson Rd. to 162 Avenue S.	1978, 1979, 1980, 1981
4. Memorial Drive	Edmonton Trail interchange	1980, 1981, 1983
	8 Street N.E. to Deerfoot Trail	1981, 1982, 1983
	18 Street N.E. to 36 Street N.E.	1983
5. 5 Street Subway	9 Avenue S.W. to 10 Avenue S.W.	1980
6. Highway 1A East	Hubalta Road to 68 Street N.E.	1978
7. Trans-Canada Highway	Barlow Trail to 68 Street N.E.	1979, 1980, 1981, 1982, 1983
8. Barlow Trail	66 Avenue S.W. to Glenmore Trail	1978
9. 36 Street N.E.	Memorial Drive to 44 Avenue N.E.	1983

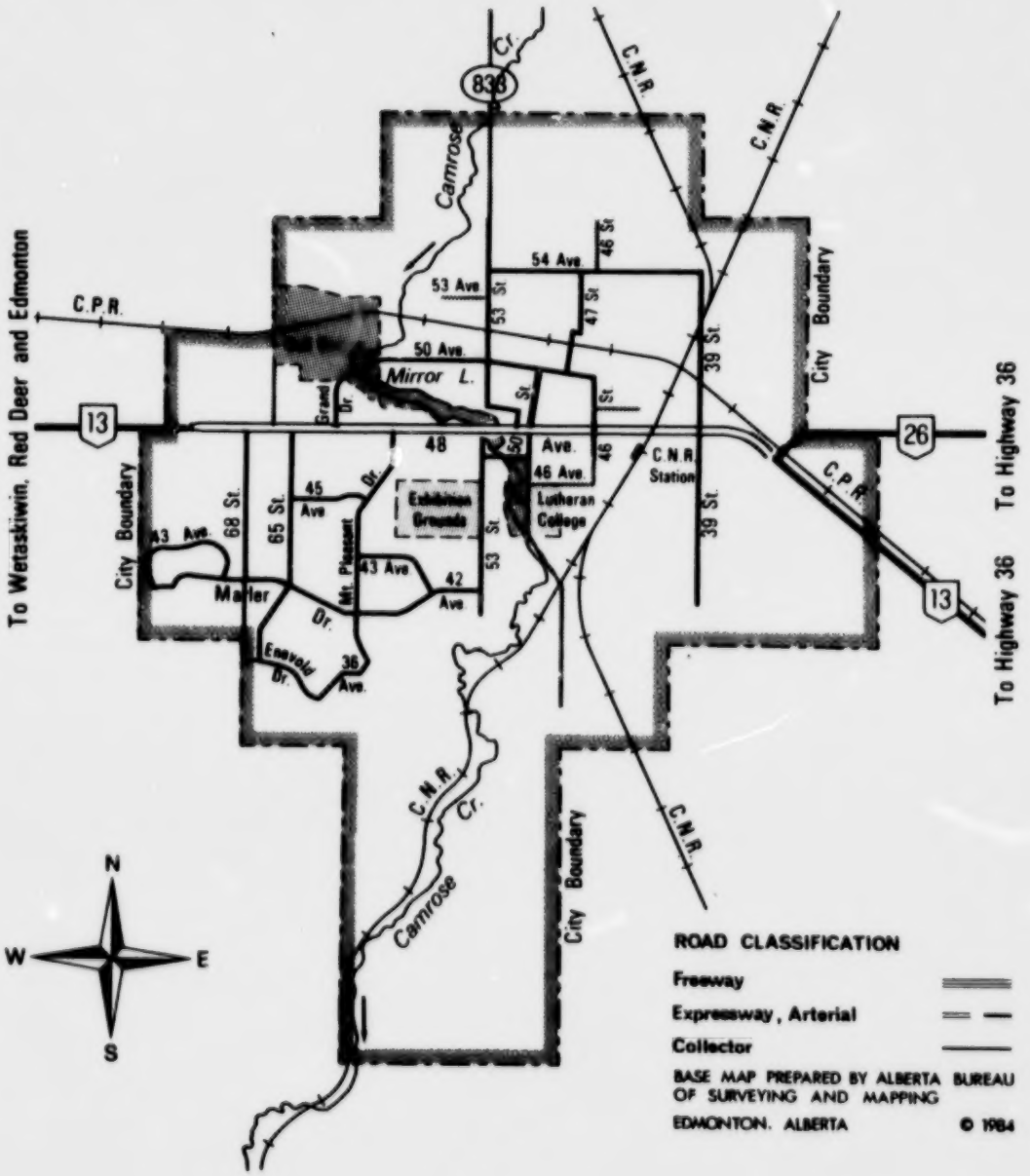
Table 3

Funding for the City of Calgary
1979/80 to 1984/85 *(in "000"s)*

Program	1979/80 *(Actual)*	1980/81 *(Actual)*	1981/82 *(Actual)*	1982/83 *(Actual)*	1983/84 *(Actual)*	1984/85 *(Estimated)*	Total
1. Arterial Roadways Capital	$9,000	$10,000	$12,000	$13,368	$13,368	$14,000	**$71,736**
2. Public Transit Capital	12,500	17,000	20,000	22,675	23,000	27,500 (A)	**122,675**
3. Transportation Systems Management	600	1,000	1,200	1,349	1,349	1,349	**6,847**
4. Major Continuous Corridors	19,440	28,751	16,109	39,200	0	0	**103,500**
5. Rwy/Hwy Grade Separations	3,250	3,113	2,248	4,125	905	385 (B)	**14,026+**
6. Urban Signing Project	N/A	14	220	869	N/A	N/A	**1,103**
7. Public Transit Operating	3,981	4,205	5,327	5,918	6,231	6,207	**31,869**
8. Primary Highway Maintenance	667	734	1,008	1,142	1,142	1,100	**5,793**
9. Research & Development	163	151	290	481	400	400 (C)	**1,885**
Total	**$49,601**	**$64,968**	**$58,402**	**$89,127**	**$46,395**	**$50,941+**	**$359,434+**

(A) Includes $2.5 million special assistance for the Northwest LRT line.
(B) Additional funds may be allocated.
(C) Allocation to date; not necessarily final grant (dependent on city's claims).

City of Camrose



Location

On a rolling plain, 93 kilometres southeast of Edmonton, the City of Camrose is situated on Highway 13, near the junction with provincial Highway 21. Camrose is served by the Canadian National Railway and the Canadian Pacific Railway.

Economic Activities

The City of Camrose is at the heart of a fertile agricultural region. Agricultural produce shipped from Camrose include: poultry, butter, beef, lambs and sheep, powdered milk, hogs, barley, wheat and oats. The city has grown as a service centre for the region. In the area surrounding Camrose there are sources of sulphur, coal, oil, natural gas, bentonite, sand, gravel and clay. Major employers are the Steel Company of Canada's steel pipe manufacturing industry, Rosehaven and St. Mary's Hospitals, the Northern Alberta Dairy Pool and the Alberta Agriculture Development Corporation.

Transportation Facts

General

Population	12,809
Area *(acres)*	6,080
Density *(people per acre)*	2.10

Roadways

Major Continuous Corridors *(km)*	n/a
Arterials *(km)*	35.1
Local and Collector Roads *(km)*	65.8
Alley Ways *(km)*	50.2
Passenger Vehicles Registered	11,255

See page 99 for dates and sources of data.

Transportation Planning

With the completion of a comprehensive transportation study and the subsequent passing of its transportation system bylaw (#1223) in 1980, the city has anticipated its roadway requirements for a future population of 20,000. This study dealt with certain key issues affecting traffic movement in Camrose. These issues include:

1. the ability of existing roadways to provide access to the downtown, especially from the growing southwest area;
2. the mix of urban and through traffic on the city's main arterial — 48 Avenue (Highway 13); and,
3. the barriers to movement created by the eastwest CPR line and southwest- northeast CNR line.

Roadways

In 1983, Camrose applied for provincial funding to begin right-of-way purchase and earthworks for the city's second valley-crossing arterial roadway: Camrose Drive. This work (between 39 and 68 Streets) may proceed when funding is available.

Camrose intends to eventually have a perimeter road at about a two kilometer radius from its central business district. Though completion of this project is well in the future, the city has already constructed some lengths of this road using funds provided under the Alberta Urban Transportation Program.

This is downtown 50 St.

Arterial Roadways Construction and Upgrading

PROJECT	LIMITS	YEARS
1. 53 Street	48 Avenue to 2,600 feet South	1978
	43 Avenue to Marler Drive	1979, 1980, 1982, 1983
	54 Avenue to north city limits	1982, 1983
2. 39 Street	44 Avenue to 48 Avenue	1978
	41 Avenue to 44 Avenue	1979
	48 Avenue to 54 Avenue	1980, 1981, 1982, 1983
3. Highway 13	Grand Crescent Park area	1978
	39 Street to 41 Street	1980, 1981
	Highway 26 intersection	1980, 1981
	39 Street intersection	1981
	46 Street intersection	1981
	39 Street to Highway 26	1982, 1983
	44 Avenue to South Service Road	1983
4. 68 Street	48 Avenue to Marler Drive	1978
	Highway 13 intersection	1983
5. 54 Avenue	47 Street to 53 Street	1980, 1981, 1982, 1983
	53 Street to 60 Street	1982, 1983
	60 Street to 68 Street	1983
6. 51 Avenue	39 Street to 46 Street	1980
7. 50 Street	44 Avenue to 47 Avenue	1980, 1981, 1982, 1983
8. 49 Street	48 Avenue to 49 Avenue	1983
9. Mt. Pleasant Drive	58 Street to Parkview Drive	1983
10. Grande Drive	48 Avenue	1983
11. 68 Street	CPR Crossing	1983

Table 4

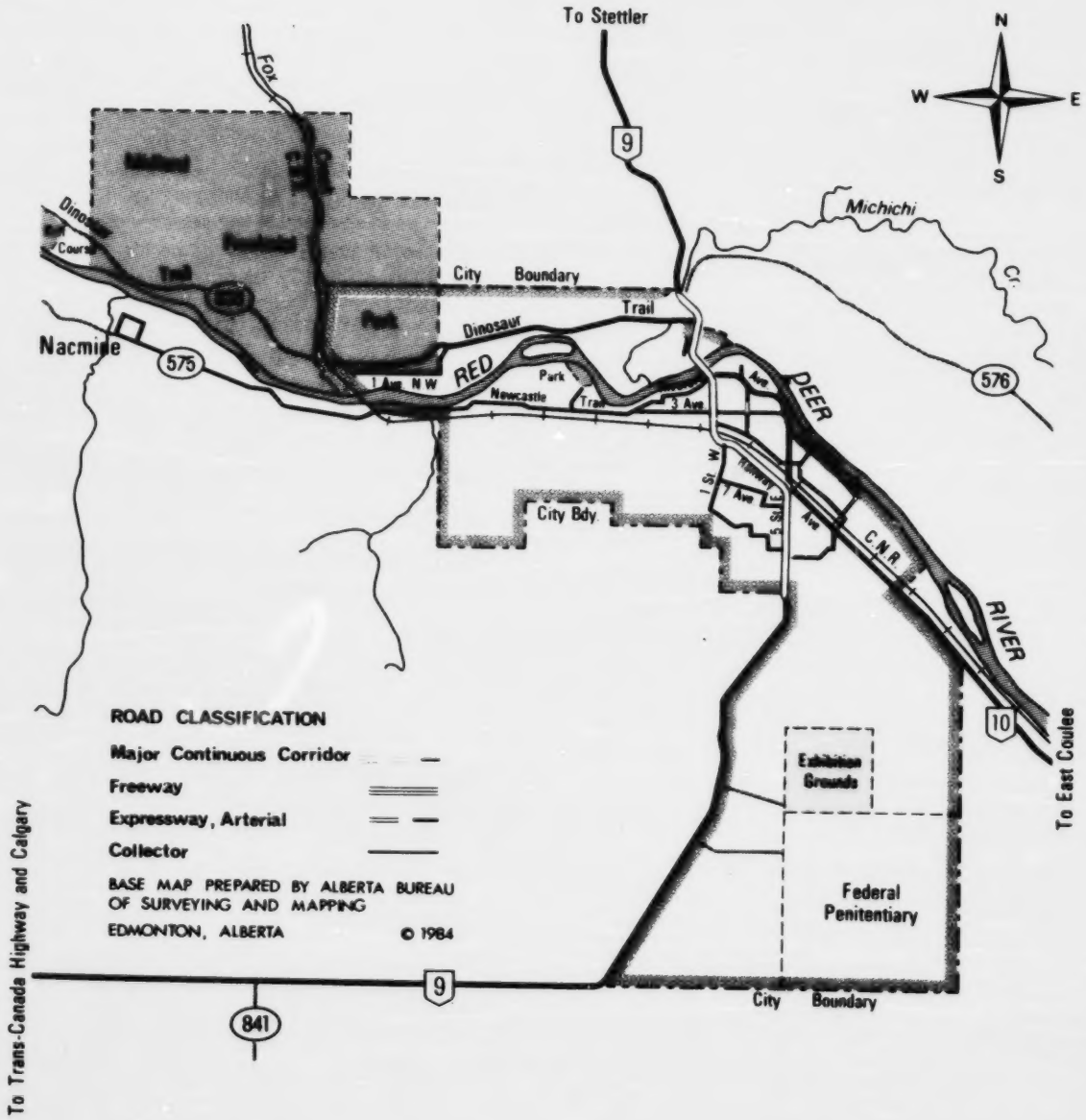
Funding for the City of Camrose 1979/80 to 1984/85 *(in "000"s)*

Program	1979/80 *(Actual)*	1980/81 *(Actual)*	1981/82 *(Actual)*	1982/83 *(Actual)*	1983/84 *(Actual)*	1984/85 *(Estimated)*	Total
1. Arterial Roadways Capital	$435	$588	$904	$1,108	$922	$1,022 (A)	**$4,979**
2. Public Transit Capital	85	85	85	85	85	85	**510**
3. Transportation Systems Management	16	27	33	37	37	33	**183**
4. Major Continuous Corridors	0	0	0	0	0	0	**0**
5. Rwy/Hwy Grade Separations	380	1,274	1,561	0	0	0	**3,215**
6. Urban Signing Project	N/A	N/A	9	13	N/A	N/A	**22**
7. Public Transit Operating	22	24	25	25	26	26	**148**
8. Primary Highway Maintenance	29	32	38	43	43	44	**229**
9. Research & Development	8	0	0	0.5	44	13 (B)	**65.5**
Total	**$975**	**$2,030**	**$2,655**	**$1,311.5**	**$1,157**	**$1,223**	**$9,351.5**

A Includes $243,000 special assistance provided for Camrose Drive.

B Allocation to date; not necessarily final grant (dependent on city's claims).

City of Drumheller



Location

Located in the valley of the Red Deer River, 138 kilometres northeast of Calgary, Drumheller is in the south-central part of Alberta. The city is on provincial Highway 9 which runs east from Drumheller to the Saskatchewan border and southwest to Calgary. The Canadian National Railway runs through the city, along the valley floor and northeast to Saskatoon.

Economic Activities

Natural resources available near Drumheller include clay, natural gas, oil and coal. It was coal mining that formed one of the early economic bases of the city and the westward reach of the railways provided a means for shipping it. Future developments in the Canadian energy industry may make the coal deposits of the Drumheller Valley a considerably more valuable source of wealth and employment than it is today.

Today the City of Drumheller is primarily a service centre for the surrounding agricultural area. In this role, the city houses offices and facilities of Alberta Government Telephones, the provincial and federal governments (including a major federal correctional institution), Alberta Power and farm machinery suppliers such as E.O. Parry Ltd.

Drumheller is also the main freight terminal for the area, with services provided by the CN Railway including spur trackage, pick-up and delivery service and warehousing facilities.

Transportation Facts

General

Population	6,671
Area *(acres)*	3,990
Density *(people per acre)*	1.63

Roadways

Major Continuous Corridors *(km)*	3.0
Arterials *(km)*	10.4
Local and Collector Roads *(km)*	50.7
Alley Ways *(km)*	26.8
Passenger Vehicles Registered	6,263

See page 99 for dates and sources of data.

Transportation Planning

Drumheller's Transportation Corridor and Roadway Network Study of 1977 developed a plan for the city's future transportation network to a population level of 15,000. Several projects recommended by this plan have been completed, including the reconstruction of Dinosaur Trail and the construction of a north-south corridor through the city to link Highway 9 north and south. Work on this corridor involved re-alignment and upgrading of South Railway Avenue to four lanes divided and the relocation of a major railway crossing from First Street West to Second Street West.

In accordance with its transportation plan, the city intends to complete the upgrading and re-alignment of the extension of South Railway Avenue. In the future this road will extend to a proposed commercial/industrial area south of the CNR tracks and west of Second Street West.

The city's participation in the provincially initiated municipal amalgamation of the Drumheller Valley is the biggest planning task facing Drumheller at this time. This rationalization could see the existing Improvement District #7 broken-up and absorbed by bordering municipalities. The City of Drumheller's possible annexation of part of I.D. #7 would increase its population by about 9%, but would increase the kilometres of streets and highways for which the City is responsible by a much greater percentage. Drumheller's current transportation system bylaw is #5-83 and was granted Order-in-Council #855/83 on October 12, 1983. In 1984, Drumheller is undertaking an update of the 1977 transportation study.

Roadways

The results of the Drumheller East-West Arterial Route Feasibility Study and other research and development studies funded under the Alberta Urban Transportation Program have aided city officials in identifying their future roadway requirements. Construction of the city's designated Major Continuous Corridor is now complete, providing adequate traffic capacity between Highway 9 north and south, within the city limits.

This is Highway 9, the main north-south arterial through Drumheller.

Arterial Roadways Construction and Upgrading

PROJECT	LIMITS	YEARS
1. Dinosaur Trail	Michichi Creek to west city limits	1978
2. Highway 9 North	Red Deer River Bridge to 800 metres north of Dinosaur Trail	1980
3. South Railway Avenue	3 Street S.W. to Premier Rd.	1981, 1982, 1983
4. Riverside Drive	Centre St. to 2 St. West	1983

Table 5

Funding for the City of Drumheller
1979/80 to 1984/85 *(in "000"s)*

Program	1979/80 *(Actual)*	1980/81 *(Actual)*	1981/82 *(Actual)*	1982/83 *(Actual)*	1983/84 *(Actual)*	1984/85 *(Estimated)*	Total
1. Arterial Roadways Capital	$90	$389	$387	$373	$105	$398	$1,742
2. Public Transit Capital	50	50	50	50	50	50	300
3. Transportation Systems Management	10	16	19	20	20	19	104
4. Major Continuous Corridors	0	0	2,500	1,010	0	0	3,510
5. Rwy/Hwy Grade Separations	0	0	0	0	0	0	0
6. Urban Signing Project	N/A	N/A	5	12	N/A	N/A	17
7. Public Transit Operating	12	13	13	13	13	13	77
8. Primary Highway Maintenance	19	22	26	29	29	29	154
9. Research & Development	17	5	1	0.2	0.2	35 (A)	58.4
Total	**$198**	**$495**	**$3,001**	**$1,507.2**	**$217.2**	**$ 544**	**$5,962.4**

(A) Allocation to date; not necessarily final grant (dependent on city's claims).

The City of Edmonton

ROAD CLASSIFICATION

Major Continuous Corridor

L.R.T.

L.R.T. (Future)

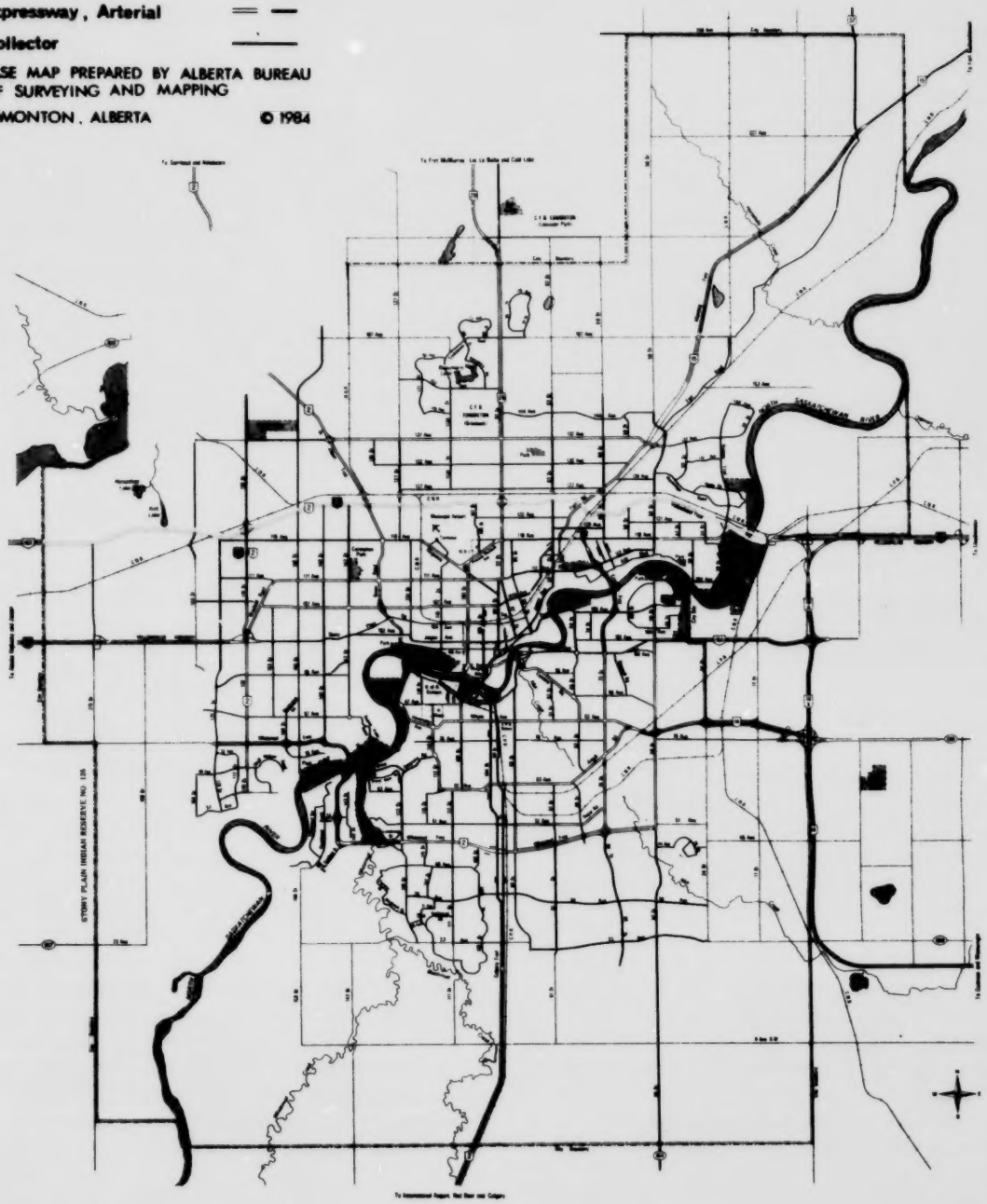
Freeway

Expressway, Arterial

Collector

BASE MAP PREPARED BY ALBERTA BUREAU OF SURVEYING AND MAPPING

EDMONTON, ALBERTA © 1984



This view looking north from the North Saskatchewan River shows the commercial hub of the Edmonton metropolitan region.

Location

Edmonton, the Capital of Alberta, is located near the centre of the province. The North Saskatchewan River passes through the city as do the Yellowhead Trail, provincial Highway 2 and the Canadian National, Canadian Pacific and Northern Alberta Railroads.

Economic Activities

Edmonton is the provincial capital and the centre of the province's public administration. Many provincial government departments are based in the city, most in the Government Centre north and east of the historic Legislature Building. There are about 35,000 people employed by federal, provincial and city governments in Edmonton.

While government is Edmonton's major "business," the energy and the petrochemical industries are of comparable importance.

There are large coal reserves and many producing oil wells within a short distance of the city. Oilfield servicing is more important in Edmonton and central Alberta than in the south. The refining of Alberta's crude oil is centred in "refinery row," to the east of the city. Companies represented there include Shell, Imperial Oil, and Gulf. Edmonton's manufacturing sector focuses on activites such as food and beverage production, metal fabrication and transportation equipment. To further diversify the city's economic base, an independent Economic Development Authority has been established to promote Edmonton as an

attractive location for new industry. The Research and Development Park, to accommodate new high technology industries, has been developed. Bell Northern Research is developing fibre-optic telecommunications technology at their new facility in this Park.

While 1982 was a year of economic difficulty for many sectors of the economy, the City of Edmonton reported annual construction permit values of over $800 million. Other indications of this urban centre's continued vitality include hosting the World University Games and opening of the new Convention Centre in 1983. As the Western Canadian "gateway to the north" Edmonton is a major storage, transportation and distribution centre for goods shipped from the east to Alaska and the Canadian Arctic.

Transportation Facts

General	
Population	560,085
Area *(acres)*	81,853
Density *(people per acre)*	6.73
Roadways	
Major Continuous Corridors *(km)*	24.0
Arterials *(km)*	748.0
Local and Collector Roads *(km)*	1,941.0
Alley Ways *(km)*	1,066.0
Passenger Vehicles Registered	406,176
Transit	
LRT Vehicles	17
Buses/Trolleys	803
Routes	113
Revenue Passengers	56,704,513
Revenue Vehicle *(km)*	30,568,839
Revenue Vehicle *(hrs.)*	1,575,320
Available seats	42,104
No. of Employees	1,786
Fuel Consumption *(L)*	16,167,294
Power Consumption *(kwh)*	9,420,000
Local Fare	0.75
Cost per passenger	1.21
Operating Revenue	25,158,553
Operating Cost	68,593,976
Revenue/Cost ratio	0.37

NOTE The figures as shown are for Edmonton Transit only and do not include those performed under contract for St. Albert or Sherwood Park.

See page 99 for dates and sources of data.

Transportation Planning

In 1984, the City of Edmonton created the Transportation Department with the responsibility of co-ordinating the transportation functions of all city departments including Engineering and Transit. Its mandate includes the planning, co-ordination, implementation, and operation of the Edmonton transportation system. The Transportation Department has prime responsibility for Edmonton's transportation systems planning. These plans are designed to guide future development of the city's transportation services and facilities.

The present planning strategy is one which balances emphasis between public and private modes of urban transport. It advocates combining expansion of the LRT system and improved transit service with further arterial roadways development and construction of a major road circling the city. Two bylaws[1] were introduced as a part of this process. One was to amend the city's General Municipal Plan, in regard to transportation while the other was a new transportation system bylaw. The city's new transportation system bylaw (number #6707) passed third reading by Edmonton City Council in November 1983 and received the required provincial Order-in-Council in January 1984. The new plan, as adopted, recognizes the decrease in Edmonton's rate of growth from that of the late 1970s and the more stringent budgetary conditions brought about by the slowdown in the economy.

Transit

In 1983, Edmonton Transit celebrated its 75th year of service to Edmontonians. The city's original transit service was the streetcar system begun in 1908. Since then, motor buses, trolleys and now Light Rail Transit have been introduced to better serve the travelling public. Edmonton's trolley service is the longest continually running system in Canada.

Edmonton Transit services are based on a series of cross-town and radial routes that operate between timed-transfer centres. Before 1978, Edmonton Transit was an all bus system featuring express-bus services from outer suburbs during peak-hours, and a system of timed-transfer points to minimize travel times and passenger inconvenience. With the addition of the first LRT line in 1978, service changes were introduced in the northeast part of the city in order to interface with the LRT system.

Three major decisions facing Edmonton's Transportation Department planners today are the selection of a suitable alignment for possible development of LRT services south of University Avenue, the rehabilitation and modernization of bus and electric trolley services (which continue to form the backbone of the city's transit operation) and the downward adjustment of service to match lower levels of ridership brought about by present economic conditions.

In June 1983 the South LRT extension opened with two more underground LRT stations beneath Jasper Avenue in downtown Edmonton. Uncertainty over the alignment and the timing of any further southward development of Edmonton's LRT system remain to be resolved (see page 80).

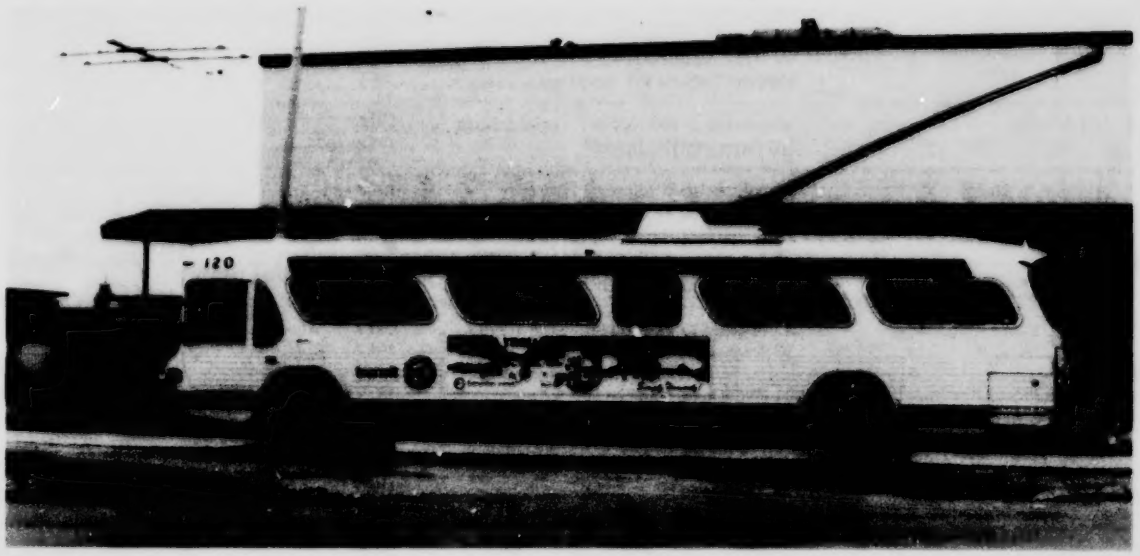
[1] *See "Legislation," Section One, page 6.*

Roadways

Over the next five to ten years, Edmonton will continue to invest in further development of its road system. Annexation of surrounding lands, in January 1982, resulted in a transfer to city control of many additional kilometres of highways and other roadways.

Future work on the existing arterial roadways in the city, and the roadways added through annexation, will be assisted by the Alberta Urban Transportation Program.

Not only will the city expand its road network, but it will seek to more fully utilize the road transportation infrastructure already in place. Edmonton's Project UNI, was designed to improve traffic capacity on existing roadways though a reorganization of traffic flow, additional signalization, bus priority measures, median improvements and other work to set a high standard for future roadway management initiatives (see page 87).



Edmonton is the only city of the province to have electric trolley buses currently in operation.

Arterial Roadways Construction and Upgrading

PROJECT	LIMITS	YEARS
1. Whitemud Drive	69 Avenue to 122 Street	1978, 1979
	99 Street to 106 Street	1978, 1983
	60 Avenue to 68 Avenue	1979
	170 Street to 178 Street	1979
	75 Street to 99 Street	1980, 1981, 1982, 1983
	111 Street intersection	1980
	50 Street to 74 Street	1981, 1982, 1983
	122 Street to 145 Street	1981, 1982, 1983
	Fox Drive Loop ramp	1981, 1982
	Terwillegar Drive interchange	1981, 1982, 1983
	34 Street to 50 Street	1983
2. 170 Street	105 Avenue to 118 Avenue	1978, 1980
	92 Avenue to 101 Avenue	1978, 1980
	69 Avenue to 79 Avenue	1980
	102 Avenue to 104 Avenue	1980
	62 Avenue to 69 Avenue	1981, 1982
	118 Avenue intersection	1981
	90 Avenue intersection	1981
	90 Avenue to 107 Avenue	1983
3. 137 Avenue	113A Street to St. Albert Trail	1978
	34 Street to Victoria Trail	1978
	127 Street to 145 Street	1979
	40 Street to 50 Street	1980
	66 Street intersection	1980
	Victoria Trail to 127 Street	1981
4. 118 Avenue	149 Street to 166 Street	1978
	167 Street to 170 Street	1978, 1979
5. Highway 2 South	23 Avenue to Whitemud Drive	1979
	23 Avenue to 51 Avenue	1980, 1981, 1982
	CPR tracks to Highway 2A	1980
6. Capilano Expressway	98 Avenue to 101 Avenue	1979
7. 111 Street	23 Avenue to 37 Avenue	1979
	30 Avenue to Blackmud Creek	1982
8. 50 Street	34 Avenue to 38 Avenue	1979, 1980
	125 Avenue to 137 Avenue	1979
	23 Avenue to 33 Avenue	1980
	39 Avenue to 76 Avenue	1980, 1981, 1982
	79 Avenue to 82 Avenue	1980
	92 Avenue intersection	1981
	38 Avenue to S. city limits	1982
	Roper Road to 38 Avenue	1983

Arterial Roadways Construction and Upgrading

PROJECT	LIMITS	YEARS
9. 75 Street	98 Avenue to 101 Avenue	1980
10. 91 Street	63 Avenue to Millwoods Road	1980
	34 Avenue to 51 Avenue	1981
	Whitemud Drive interchange	1983
11. 97 Street	127 Avenue to 137 Avenue	1980, 1981
	153 Avenue to north city limits	1980
	110 Avenue to Yellowhead Trail	1982, 1983
12. Victoria Trail	125 Avenue to 153 Avenue	1980
	Yellowhead Trail to 153 Avenue	1981, 1982
13. 23 Avenue	Highway 2 to 119 Street	1980, 1981
	91 Street to Parsons Road	1980
	66 Street intersection	1980
	50 Street to Highway 2	1982
14. Manning Freeway	144 Avenue intersection	1980
	134 Avenue to 144 Avenue	1983
15. 153 Avenue	97 Street to 127 Street	1980, 1981
	66 Street to 110 Street	1982
16. 127 Street	125 Avenue to 128 Avenue	1981
	137 Avenue to 153 Avenue	1981, 1983
17. 156 Street	107 Avenue intersection	1982
18. Terwillegar Drive	40 Avenue to 23 Avenue	1982
19. 106 Street	40 Avenue to 51 Avenue	1983
20. Groat Road	111 Avenue to Groat Bridge	1983
21. 34 Avenue	91 Street to Highway 2	1983
	Millwoods Rd. east to 48 St.	

Table 6

Funding for the City of Edmonton
1979/80 to 1984/85 *(in "000"s)*

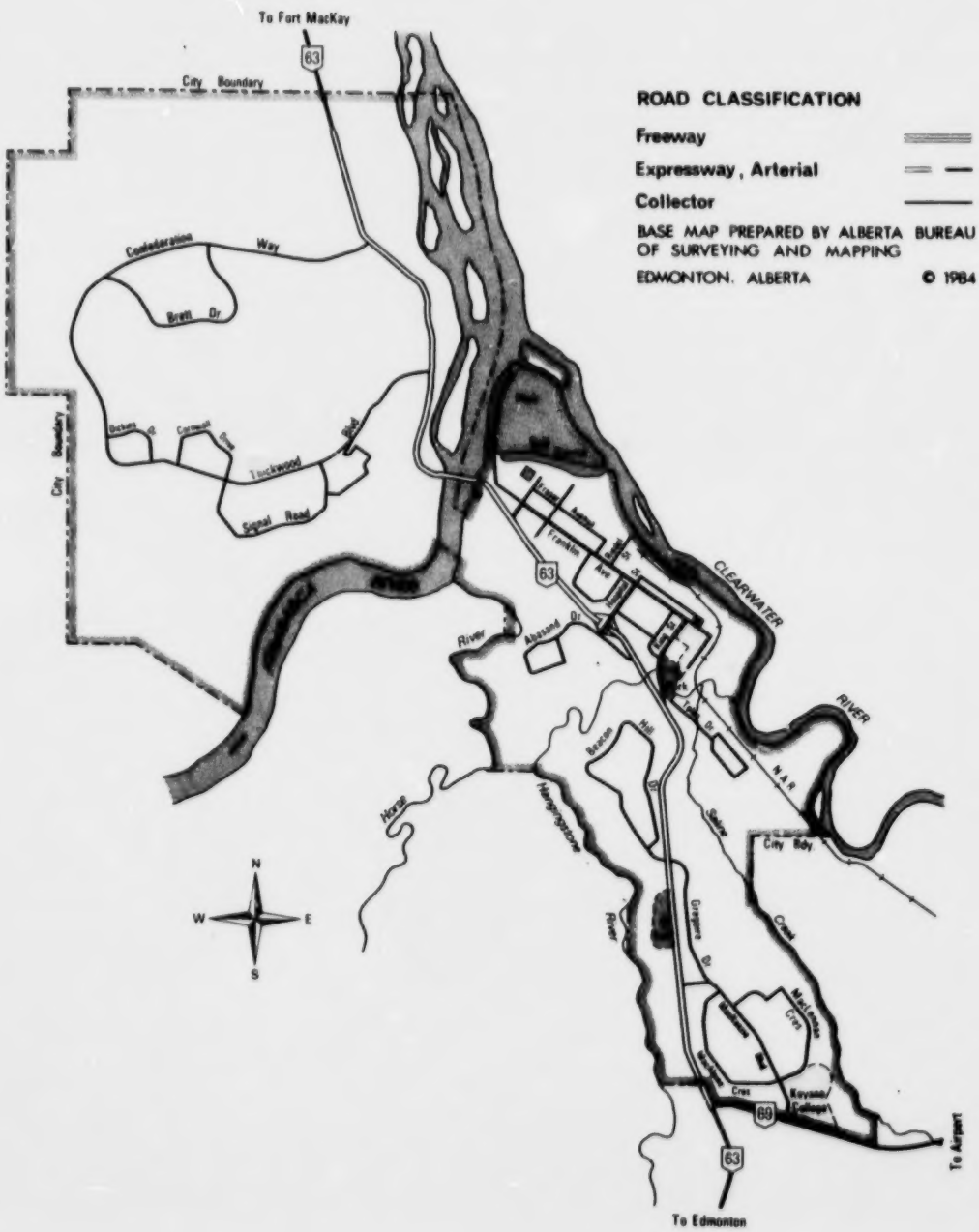
Program	1979/80 *(Actual)*	1980/81 *(Actual)*	1981/82 *(Actual)*	1982/83 *(Actual)*	1983/84 *(Actual)*	1984/85 *(Estimated)*	Total
1. Arterial Roadways Capital	$9,000	$10,000	$12,000	$ 13,368	$13,368	$15,300 (A)	**$73,036**
2. Public Transit Capital	12,500	17,000	20,000	22,675	23,000	25,000	**120,175**
3. Transportation Systems Management	600	1,000	1,200	1,349	1,349	1,349	**6,847**
4. Major Continuous Corridors	12,940	8,000	15,700	12,200	4,660	(B)	**53,500+**
5. Rwy/Hwy Grade Separations	3,870	3,113	3,691	3,375	3,500	269	**17,818**
6. Urban Signing Project	N/A	N/A	180	679	N/A	N/A	**859**
7. Public Transit Operating	3,685	3,793	4,691	5,299	5,513	5,601	**28,582**
8. Primary Highway Maintenance	500	603	833	1,306	1,108	932	**5,282**
9. Research & Development	620	270	142	180	400	370 (C)	**1,982**
Total	**$43,715**	**$43,779**	**$58,437**	**$60,431**	**$52,898+**	**$48,821+**	**$308,081+**

(A) Includes an estimated $1.3 million special assistances for Alberta Terminals Ltd. access.

(B) Funding in 1984/85 is dependent on approval to proceed improvements.

(C) Allocation to date; not necessarily final grant (dependent on city's claims).

City of Fort McMurray



Location

Fort McMurray is the province's northernmost city. Situated at the confluence of the Athabasca and Clearwater Rivers, Fort McMurray is linked with Edmonton, 435 kilometres to the southwest, by provincial Highway 63 and the Northern Alberta Railway.

In Fort McMurray looking north, the Clearwater River on right, Highway 63 on left.

Economic Activities

Fort McMurray gained city status in 1980, and hence is the second newest city in Alberta. Explosive growth in the 1960s and 70s saw an increase in population from 1,181 in 1961 to 34,494 in 1983. This economic boom was created by Fort McMurray's proximity to huge potential sources of energy and by the rapid rise in the world price of oil.

'Mega Projects' planned by the Alsands Consortium and by other major companies have slowed since 1981, leading to a fall-off in Fort McMurray's rate of growth. Despite these set-backs, the city is still well placed to benefit from energy developments. Can-Terra is undertaking a pilot oil-sands project northeast of the city using insitu recovery technology. Amoco may also undertake similar activity in the near future. To serve the needs of the energy industry around Fort McMurray a number of oil services companies such as Catalytic Enterprises have established operations there.

Transportation Facts

General	
Population	34,494
Area *(acres)*	14,844
Density *(people per acre)*	2.26
Roadways	
Major Continuous Corridors *(k:n)*	n/a
Arterials *(km)*	18.6
Local and Collector Roads *(km)*	101.2
Alley Ways *(km)*	16.3
Passenger Vehicles Registered	43,060
Transit	
Buses/Trolleys	10
Routes	6
Revenue Passengers	300,000
Revenue Vehicle *(km)*	577,800
Revenue Vehicle *(hrs.)*	27,000
Available seats	207
No. of Employees	25
Fuel Consumption *(L)*	245,000
Local Fare	1.00
Cost per passenger	2.06
Operating Revenue	300,000
Operating Cost	730,000
Revenue/Cost ratio	0.41

See page 99 for dates and sources of data.

Transportation Planning

During 1981 and 1982, the City of Fort McMurray undertook a comprehensive transportation study which dealt with the future overall requirements of the city's roadway network and its public transit system. This study identified transportation infrastructure and construction requirements over a five-year, a ten-year and beyond a ten-year period. It recommended that after the city reaches a population of 53,000, future development should be directed into the Forest Heights area east of the central business district across the Clearwater River. Other recommendations included upgrading Highway 63 between Marshall Street and Thickwood Boulevard; constructing a new lower townsite loop road; constructing a bridge over the Clearwater River, to facilitate development across the river, and constructing a new south arterial to replace King Street. Of these projects, significant upgrading of Highway 63 has already been undertaken by the province.

Two factors made this particular study quite unusual. The first of these was the unusually high variation between the baseline population figure and that of the horizon year. An economic analysis, extrapolating from existing perceived trends indicated that if oil sands development went ahead rapidly from a 1981 population of 30,000 the city could grow to 169,000 within twenty years. The second was that there are topographic constraints to accommodating such growth within the present city boundaries, hence the potential need to cross the Clearwater River and develop Forest Heights.

The City of Fort McMurray now has transportation system bylaw #83110 passed in March 1984 and has received provincial Order-in-Council #213/84.

Transit

Fort McMurray has had a public transit system since April 1980. The system is a contract operation whereby the vehicles used for the service are maintained and operated by the contractor, Williams Holdings Ltd. Prior to 1980 the contractor also provided the necessary buses. The city now owns four out of the ten buses operated by the contractor. Hours of operation are 0700 to 2100, Monday to Wednesday and 0700 to 2300 Thursday to Saturday. Of the six routes operated, five are all-day services and one a peak-hour service.

Headways during peak periods were reduced from one hour to thirty minutes in October 1982. The city is now convinced that transit ridership must be developed more vigorously than before. Policies which encourage use of the transit system have been strengthened.

A feature unusual in the province, which affects the ridership figures of Fort McMurray's transit system, is the commuter bus services provided by Suncor and Syncrude for their employees between residential areas of Fort McMurray and the oil sands plant thirty minutes north of the city limits. All these employees, none of whom utilize the public transit system, represent about 40% of the peak-hour ridership volume.

Roadways

Fort McMurray's existing roadway network is basically linear, focused on Highway 63, the city's major thoroughfare which passes from the north to the south city limits.

Because of Fort McMurray's uneven topography, it is difficult to efficiently distribute traffic flows through the central business district in the lower townsite. At present, only two north-south arterials, Highway 63 and Franklin Avenue, exist to handle downtown traffic. Congestion causes delay problems for road users in this area. The linear roadway network also makes the design of intersections and major cross-streets more difficult.

Arterial Roadways Construction and Upgrading

PROJECT	LIMITS	YEARS
1. Hospital Street	Highway 63 to Manning Ave. Franklin Avenue to Highway 63	1981, 1982 1983
2. Riedel Street	Franklin Avenue intersection	1981
3. Thickwood Boulevard	Highway 63 to Ross Haven Drive	1981, 1982, 1983

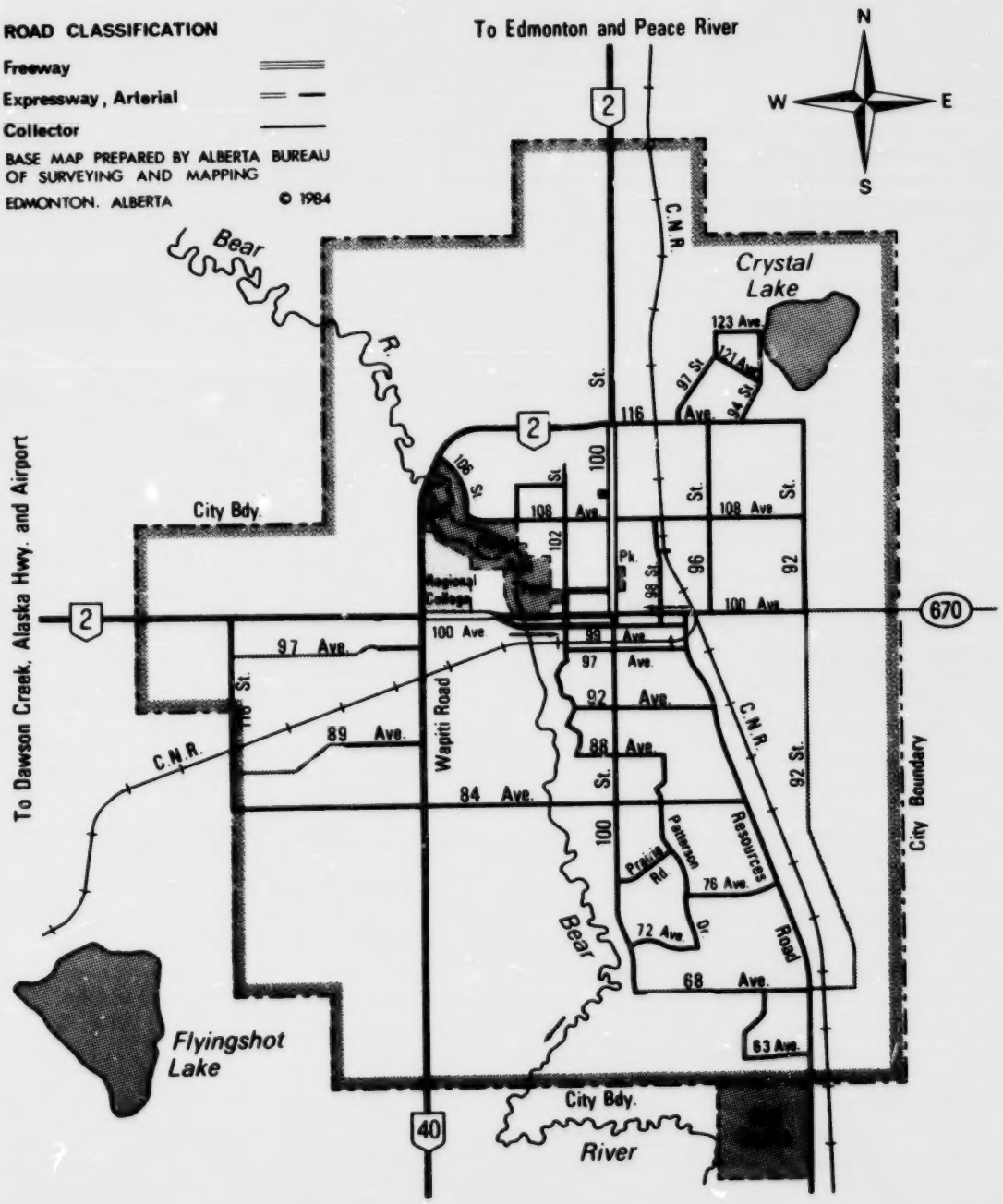
Table 7

Funding for the City of Fort McMurray
1979/80 to 1984/85 *(in "000"s)*

Program	1979/80 *(Actual)*	1980/81 *(Actual)*	1981/82 *(Actual)*	1982/83 *(Actual)*	1983/84 *(Actual)*	1984/85 *(Estimated)*	Total
1. Arterial Roadways Capital	$0	$747	$1,570	$1,850	$1,850	$1,850	**$7,867**
2. Public Transit Capital	0	215	235	255	275	295	**1,275**
3. Transportation Systems Management	0	33	79	94	94	74	**374**
4. Major Continuous Corridors	0	0	0	0	0	0	**0**
5. Rwy/Hwy Grade Separations	0	0	0	0	0	0	**0**
6. Urban Signing Project	N/A	N/A	24	94	N/A	N/A	**118**
7. Public Transit Operating	0	208	277	308	336	345	**1,474**
8. Primary Highway Maintenance	N/A	N/A	N/A	N/A	N/A	N/A	**N/A**
9. Research & Development	0	0	125	29	4	4 (B)	162
Total	**$0**	**$1,203**	**$2,310**	**$2,630**	**$2,559**	**$2,568**	**$11,270**

(A) Not applicable because the city's one primary highway (#63) is maintained by the province.
(B) Allocation to date; not necessarily final grant (dependent on city's claims).

City of Grande Prairie



Location

Grande Prairie is located in the northwest of Alberta on provincial Highway 2, 75 kilometres from the British Columbia border. It is served by the Canadian National and Northern Alberta Railways, by Greyhound and by scheduled air service by CP Air and Time Air from Edmonton.

Economic Activities

The City of Grande Prairie, in the south of the Peace River country, is an area of farming, pulp milling and timber cutting. Energy resources typical of northern Alberta, including oil, gas and coal, are present in Grande Prairie's service region. The Elmsworth gas production area is west of the city on Secondary Road 667.

Proctor and Gamble have a major pulp plant and sawmill providing 1,000 jobs in the city. Other major employers are Northern Canadian Forest Industries (plywood and lumber production) with 450 employees in the area and the Northland Feed and Farm Supply Company. For the mid 1980s, Grande Prairie and area can look forward to a number of oil and gas industry developments. Among these are Canadian Hunter's $20-30 million ethane extraction plant in the Swan Hills area east of the City. Miscible flooding, a technique used to increase the efficiency of oil and gas recovery, is used.

Another potential development is Dome Petroleum's LNG exports project. This project to send Alberta and B.C. natural gas to Japan for use by energy utilities there would require construction of a major pipeline from the Grande Prairie gas production area to the B.C. coast. Gas sales are estimated to have a potential of $490 million per annum of which Alberta's share would be half.

This view of Grande Prairie shows the downtown area.

Transportation Facts

General	
Population	24,076
Area *(acres)*	10,080
Density *(people per acre)*	2.28

Roadways	
Major Continuous Corridors *(km)*	n/a
Arterials *(km)*	35.5
Local and Collector Roads *(km)*	143
Alley Ways *(km)*	28.4
Passenger Vehicles Registered	22,694

Transit	
Buses/Trolleys	6
Routes	5
Revenue Passengers	431,600
Revenue Vehicle *(km)*	329,123
Revenue Vehicle *(hrs.)*	19,968
Available seats	270
No. of Employees	21
Fuel Consumption *(L)*	215,855
Local Fare	0.50
Cost per passenger	1.35
Operating Revenue	180,319
Operating Cost	583,286
Revenue/Cost ratio	0.31

See page 99 for dates and sources of data.

Transportation Planning

The transportation bylaw governing Grande Prairie's urban transportation planning and development is Bylaw C-781 which was adopted by City Council on December 13, 1982 and which received the required provincial Order-in-Council (No.159/83) on Feb. 23, 1983. This bylaw superceded the old transportation bylaw (C-398) of 1971.

The 1982 Grande Prairie Transportation Study established what the probable roadway development needs would be for the city up to a population of 50,000. Staging of roadway upgrading necessary for the future development of industrial and residential growth areas were recommended.

Transit

Grande Prairie's transit operation is the newest in the province. Service began on March 2, 1981. As of 1983 the property was equipped with seven GMC buses owned and maintained by the City and operated under contract by Evergreen Transportation.

It is the policy of City Council and the transit administration that all Grande Prairie citizens will be served by a bus route within 300 metres of their place of residence. About 98% of residential areas are served at these standards. Service hours are 0600 to 1900, Monday to Wednesday and 0600 to 2200 on Thursday and Friday. Saturday service is of the same standard as that of the beginning of the week.

Five routes are operated at this time, of which one is peak-hour only. It is anticipated that no increase in the number of routes will take place until late 1984, though the route now operated only in peak-hours may be extended to all day service if ridership develops more quickly than expected. At this time, ridership is following the expected growth pattern.

Roadways

The road network in Grande Prairie is based on a simple grid system. The only significant natural barrier to transportation within the city limits is the Bear River Valley, which is crossed by four roads on three bridges and one landfill embankment. In recent years, Grande Prairie has undertaken a number of studies relevant to future roadway and traffic-capacity enhancement including a downtown parking study, a road needs study and a major transportation study, completed in 1981. Upgrading of the Highway 2 by-pass, improvements to 116 Street and the construction of additional bridges over the Bear River are the most recent roadway projects funded under the Alberta Urban Transportation Program.

Arterial Roadways Construction and Upgrading

PROJECT	LIMITS	YEARS
1. Highway 2	Bypass Bridge to 106 Street	1978
	106 Street intersection	1978, 1979
2. 84 Avenue	100 Street to 108 Street	1978
	108 Street to 116 Street	1982, 1983
3. 100 Street	92 Avenue to 97 Avenue	1979
	101 Avenue to 107 Avenue	1980
	100 Avenue to 108 Avenue	1981, 1982
	97 Avenue to 100 Avenue	1983
4. 100 Avenue	105 Street to 108 Street	1979, 1980
5. 92 Street	100 Avenue to 116 Avenue	1981, 1982
6. 116 Avenue	94 Street to 92 Street	1981, 1982
7. 116 Street	84 Avenue to 100 Avenue	1982, 1983
8. 98 Street	100 Avenue to 108 Avenue	1983
	108 Avenue to 116 Avenue	1983

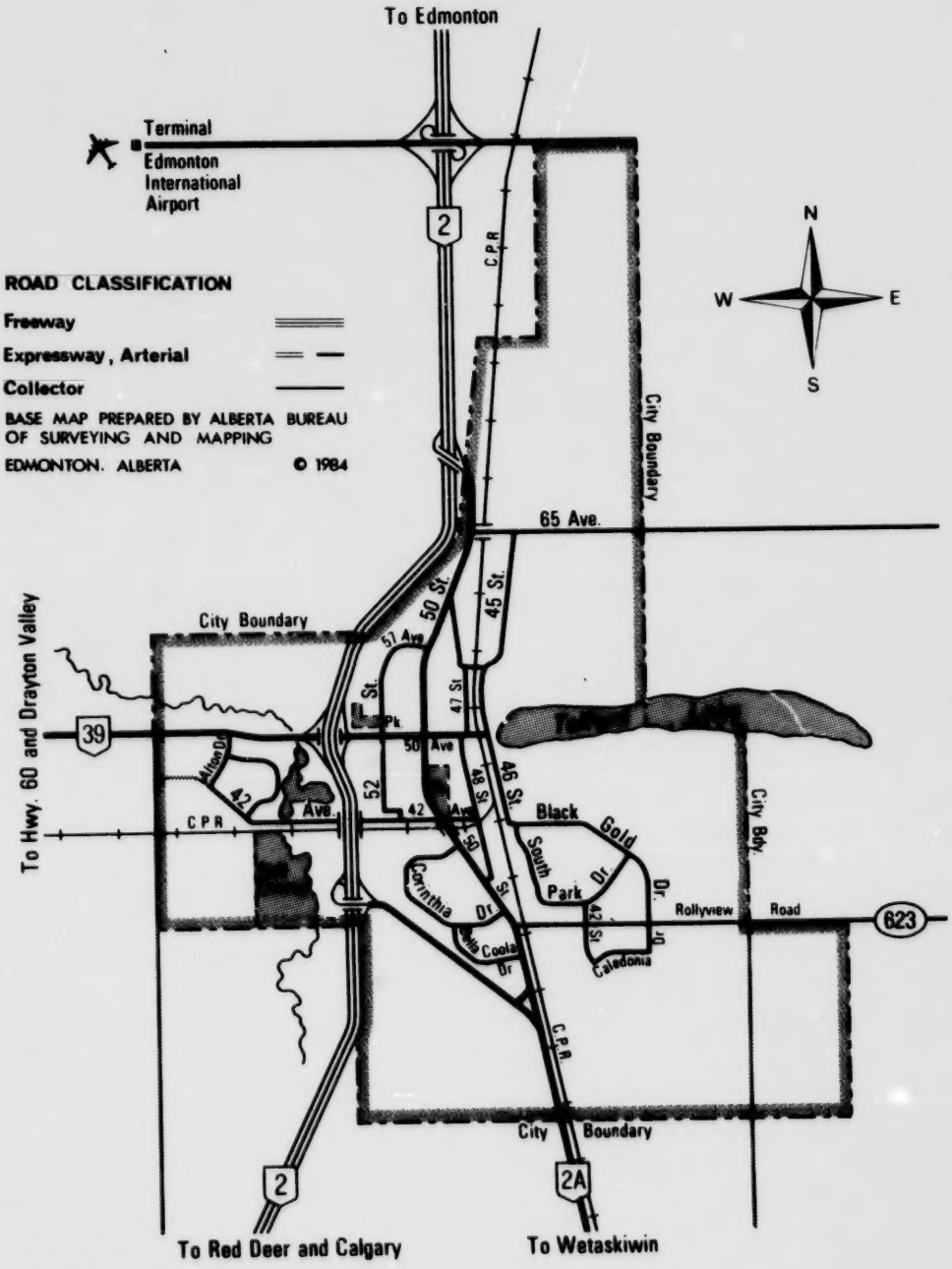
Table 8

Funding for the City of Grande Prairie
1979/80 to 1984/85 *(in "000"s)*

Program	1979/80 *(Actual)*	1980/81 *(Actual)*	1981/82 *(Actual)*	1982/83 *(Actual)*	1983/84 *(Actual)*	1984/85 *(Estimated)*	Total
1. Arterial Roadways Capital	$875	$913	$1,340	$1,610	$1,610	$1,610	**$7,958**
2. Public Transit Capital	150	150	185	200	200	200	**1,085**
3. Transportation Systems Management	28	47	56	66	66	66	**329**
4. Major Continuous Corridors	0	0	0	0	0	0	**0**
5. Rwy/Hwy Grade Separations	0	0	0	0	0	0	**0**
6. Urban Signing Project	N/A	N/A	18	74	N/A	N/A	**92**
7. Public Transit Operating	41	45	228	242	243	241	**1,040**
8. Primary Highway Maintenance	40	44	52	60	59	59	**314**
9. Research & Development	17	0	37	27	0.3	4 (A)	**85.3**
Total	**$1,151**	**$1,199**	**$1,916**	**$2,279**	**$2,178.3**	**$2,180**	**$10,903.3**

(A) Allocation to date; not necessarily final grant (dependent on city's claims).

City of Leduc



Location

The City of Leduc is situated 12 kilometres south of Edmonton on provincial Highway 2. It is close to the International Airport at Nisku.

Economic Activities

Leduc received city status on September 1, 1983 and is thus the newest city in Alberta. Leduc was the site of the original oil discovery in the province. As oil drilling raced ahead, so too did the development of Leduc, which became the service centre for the oil patch in the 1940s and 50s. Being close to a major airport, the busiest highway in the province and on the main Edmonton to Calgary rail line gives Leduc a number of economic advantages over similar sized cities elsewhere in the province. Many airfreight, warehousing and other distribution companies have facilities in the city. The Nisku Industrial Park to the north of Leduc houses companies such as ATCO Drilling, Brent Steel Processors and Kenting Oilfield Services.

Leduc is also a prime service centre for the mixed farming and grain growing area of Leduc County.

Alberta's 13th city as of September 1, 1983, Leduc is now eligible for funding under the Alberta Urban Transportation Program.

Transportation Facts

General

Population	12,471
Area *(acres)*	5,520
Density *(people per acre)*	2.26

Roadways

Major Continuous Corridors *(km)*	n/a
Arterials *(km)*	28.5
Local and Collector Roads *(km)*	54.5
Alley Ways *(km)*	23.5
Passenger Vehicles Registered	n/a

See page 99 for dates and sources of data.

Transportation Planning

A transportation study with the twin aims of determining a transportation plan sufficient to accommodate Leduc's growth over the 20-year period to 2001 and of developing a plan implementation program was completed in May 1981. At the same time a longer range '2001+' conceptual plan was prepared.

In 1983, with the change of its status from town to city, Leduc was required, under the terms of the City Transportation Act, to prepare a City Transportation Bylaw. This bylaw, #05-83, was passed by the City Council in May 1984, and is awaiting provincial Order-in-Council. This bylaw legally describes the roadways that would be eligible for construction and maintenance grants under the province's Urban Transportation Program. Leduc's bylaw is based on an updated version of their 1981 transportation study.

Roadways

The city has three major east-west roadways, Rollyview Road, 50th Avenue and 42nd Avenue, the latter two with grade separated crossings of Highway 2. It has four major north-south thoroughfares, 50th Street, Highway 2A, Highway 2 and 46th Street. Although capacity on these roads is presently deemed adequate to handle existing and near-term traffic levels, the 1981 transportation study found that Highway 2A and Highway 39 may need widening to four lanes if traffic grows steadily in future. Blackgold Road, linking 46th Street and Rollyview Road was also designed as a future four-lane facility.

Arterial Roadways Construction and Upgrading

PROJECT	LIMITS	YEARS

No projects have yet been completed under the Alberta Urban Transportation Program, as Leduc's new city status gave them eligibility for funding only in the 1984/85 year.

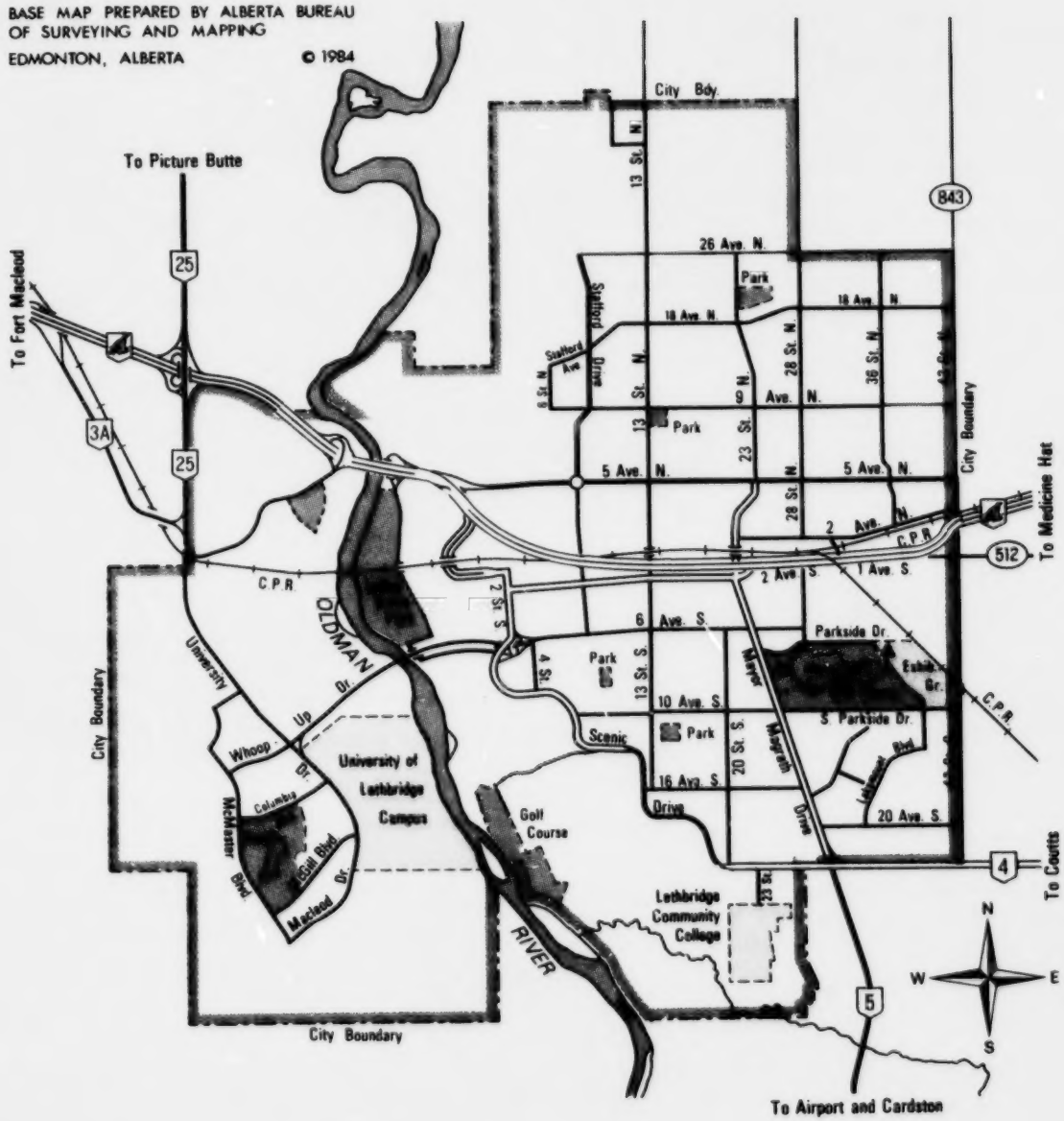
Table 9

Funding for the City of Leduc
1984/85 *(in "000"s)*

Program	1984/85
1. Arterial Roadways Capital	$755
2. Public Transit Capital	83
3. Transportation Systems Management	35
4. Major Continuous Corridors	0
5. Rwy/Hwy Grade Separations	0
6. Urban Signing Project	0
7. Public Transit Operating	25
8. Primary Highway Maintenance	19
9. Research & Development	2(A)
Total	**$919**

(A) Allocation to date; not necessarily final grant (dependent upon city's claims).

City of Lethbridge



Location

The City of Lethbridge lies in the southern most part of Alberta near the U.S. (Montana) border. It is linked by Highways 4 and 5 to the U.S. border, by Highway 3 (the Crowsnest Trail) to British Columbia and by provincial Highways 2 and 23 to Calgary, 217 kilometres to the north. The Canadian Pacific Railway and Time Air also serve Lethbridge.

Economic Activities

The City of Lethbridge (incorporated in 1906) is the third largest city in Alberta.The early settlement of the site came about with the discovery of coal in the area and the establishment of Alberta's first coal mine there in 1872. Coal is not the only energy resource in the Lethbridge region; oil and natural gas are produced in the area. The dry, relatively warm climate of the Lethbridge area and its well developed irrigation systems make Lethbridge a major source of sugar beets, oil seeds and other vegetables and grains. Beef production, brewing and distilling, telephone manufacture, industrial compressor production and several other industries complete the picture of a strong, diversified economic base for the city.

There are four important developments now proceeding in Lethbridge. One is "Centre Site." This project involves the removal of the Canadian Pacific Railway yards from the centre of Lethbridge to a new site, at Kipp, 13 kilometres to the west. This relocation releases 135 acres of prime development real estate, of which 40 acres is to form a right-of-way for Lethbridge's Major Continuous Corridor. The rest of this land will be consolidated by the city, with provincial assistance, and then privately developed in a process overseen by the city. The other three developments are a $350 million irrigation upgrading program, the opening of the new Kawneer plant, an aluminium facility which will eventually employ 350 people, and the construction of a $135 million regional hospital.

One of the city's 25 buses on route in downtown Lethbridge.

Transportation Facts

General

Population	58,086
Area *(acres)*	16,148
Density *(people per acre)*	3.49

Roadways

Major Continuous Corridors *(km)*	5
Arterials *(km)*	66
Local and Collector Roads *(km)*	272.8
Alley Ways *(km)*	154.8
Passenger Vehicles Registered	43,060

Transit

Buses/Trolleys	27
Routes	9
Revenue Passengers	2,215,000
Revenue Vehicle *(km)*	1,350,000
Revenue Vehicle *(hrs.)*	62,700
Available seats	1,415
No. of Employees	57
Fuel Consumption *(L)*	823,583
Local Fare	0.55
Cost per passenger	0.82
Operating Revenue	746,770
Operating Cost	1,810,650
Revenue/Cost ratio	0.41

See page 99 for dates and sources of data.

Transportation Planning

The City of Lethbridge completed a comprehensive transportation study in 1976. This study presented plans for the roadway and the public transit systems of the city to a population level of 72,000. It also made recommendations regarding transportation services for the handicapped, downtown parking and possible low-cost geometric improvements to roadways, such as left-turning bays.

A major decision resulting from this study was the city's plan to concentrate future residential growth in the west of Lethbridge to minimize future transportation expenditures. Major roadworks initiated by the 1976 plan included the construction of 43 Street between Highway 4 and 5 Ave. North and the planning and start of a Major Continuous Corridor which will create a high capacity trans-urban roadway through the city linking the Crowsnest Highway east and west of the city. Construction on the corridor has already begun.

In 1983, the City of Lethbridge carried out a comprehensive transportation study which will facilitate the updating of its transportation system bylaw. The existing bylaw governing transportation in the city is #3366 which amended Bylaw #3000. This amendment received the required provincial Order-in-Council (042/80) on January 16, 1980.

Transit

Lethbridge Transit operates an all-bus transit service using 27 diesel powered vehicles, with an average age of 7.6 years. The property also operates 31 buses for the Public and Separate School Boards, including six transit buses and 25 school buses. There are nine routes operated between the hours of 0600 and 2300, Monday to Saturday. Headways are usually 20 minutes, however on three routes it is 30 minutes.

In 1982, the Lethbridge Transit Service carried 2,215,000 transit passengers and 1,500,000 school passengers. It has been Lethbridge policy that, as transit ridership grows, regular 40 foot GM transit buses used for school busing will be transferred to public transit service. They will be replaced on the school busing services by the standard school bus which has greater seating capacity and is less expensive to buy. In 1983, as part of the transportation study, the City of Lethbridge commenced a review of transit routing, vehicle maintenance and general operations.

Roadways

The most important roadway project in Lethbridge is the planning and construction of a Major Continuous Corridor through the city, the Crowsnest Trail. This new route uses right-of-way vacated by removal of the Canadian Pacific Railway yards. As an integral part of the 'Centre Site' urban re-development project the new roadway will add to the value of development land included in the 'Centre Site' parcel. Corridor construction began in early 1983 with completion scheduled for 1986. With the removal of the CPR yards, both east-west and north-south traffic flow will be enhanced. In the city's prime employment area, between 13 Street and Scenic Drive, the three north-south oriented roadways will have their capacity doubled from one to two lanes, each way, when the four-laning of Stafford Drive/9 Street and Scenic Drive are complete.

Arterial Roadways Construction and Upgrading

PROJECT	LIMITS	YEARS
1. 5 Avenue North	23 Street to 43 Street N.	1978
2. 43 Street	5 Avenue N. to Highway 4	1979, 1980, 1981
3. Mayor McGrath Drive	4 Avenue S. to 7 Avenue S. 2 Avenue N. intersection	1978 1980
4. Stafford Drive	St. Edward Boulevard to 28 Avenue	1980
5. Oldman River Bridge	1981, 1982	
6. Scenic Drive	4 Street S. to 11 Street S. 4 Avenue S. to 4 Street S.	1981 1983
7. 23 Street	18 Avenue N. intersection	1980
8. MacLeod Drive	University Dr. to McMaster Blvd.	1982, 1983
9. University Drive	McGill Blvd. to McLeod Drive Columbia B.vd. to Mic Mac Blvd.	1982, 1983 1983
10. Highway 4	Highway 5 intersection	1982
11. 26 Avenue North	13 Street to 23 Street	1983

Table 10

Funding for the City of Lethbridge
1979/80 to 1984/85 *(in "000"s)*

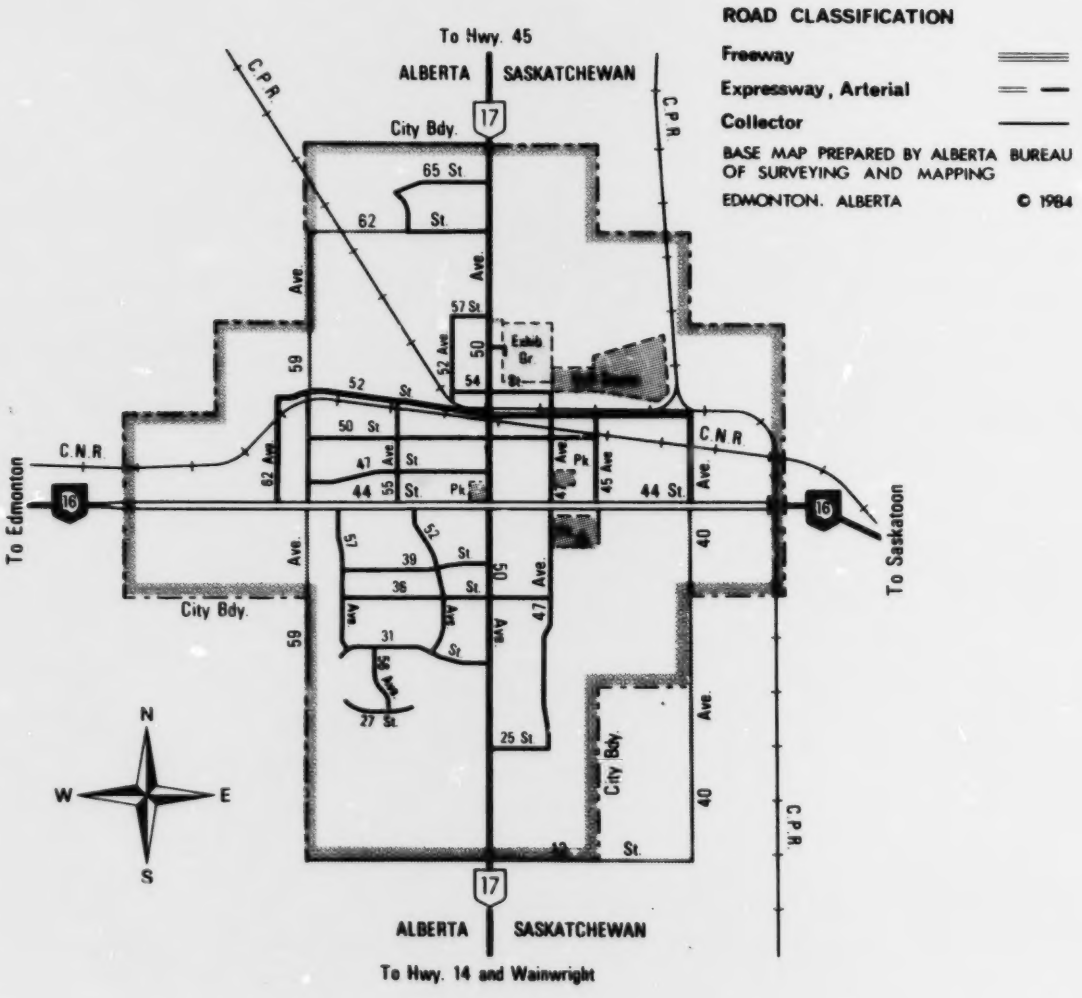
Program	1979/80 *(Actual)*	1980/81 *(Actual)*	1981/82 *(Actual)*	1982/83 *(Actual)*	1983/84 *(Actual)*	1984/85 *(Estimated)*	Total
1. Arterial Roadways Capital	$2,250	$2,500	$2,940	$3,330	$3,462 (A)	$3,550	**$18,032**
2. Public Transit Capital	400	440	480	520	560	600	**3,000**
3. Transportation Systems Management	76	126	151	172	172	151	**848**
4. Major Continuous Corridors	0	0	0	17,500	25,800 (B)	12,700	**56,000**
5. Rwy/Hwy Grade Separations	0	0	0	0	0	0	**0**
6. Urban Signing Project	N/A	N/A	41	42	N/A	N/A	**83**
7. Public Transit Operating	387	399	492	546	565	581	**2,970**
8. Primary Highway Maintenance	102	113	137	155	159	123	**789**
9. Research & Development	0	0	6	6	75	19 (C)	**106**
Total	**$3,215**	**$3,578**	**$4,247**	**$22,271**	**$30,793**	**$17,724**	**$81,828**

(A) Includes $131,500 special assistance for a rest area and landscaping project.

(B) Includes $8.3 million advance on 1984/85 allocation.

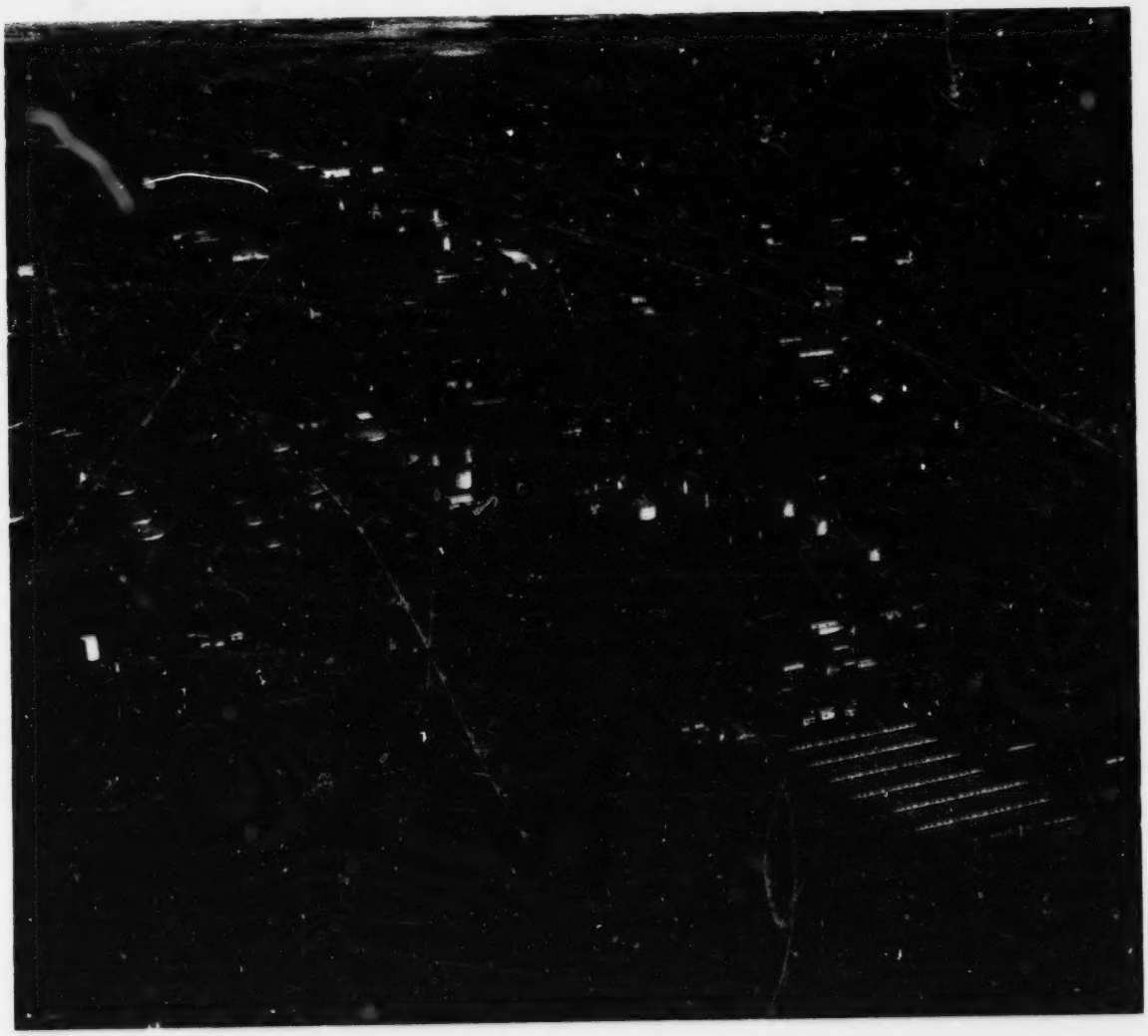
(C) Allocation to date; not necessarily final grant (dependent on city's claims).

City of Lloydminster



Location

Lloydminster, Alberta's most easterly city, lies on the Alberta/Saskatchewan border 248 kilometres from Edmonton and 272 kilometres from Saskatoon, Saskatchewan. The city is located on the Yellowhead Trail (Highway 16) and is served by both Canadian National and Canadian Pacific Railways.



Looking east along 44 Street near 50 Avenue, the Alberta-Saskatchewan border through Lloydminster can be seen. The city's recently completed 52 Street truck route, the Husky Oil refinery and the downtown are also shown in this photograph.

Credit: R.J. Brown, Lloydminster, Saskatchewan.

Economic Activities

Since settlement, agriculture has formed the economic foundation of Lloydminster, but like many other centres in Alberta, the oil business is becoming increasingly important to the local economy. The first oil refinery in Lloydminster was constructed in the 1940s, at the beginning of a period of rapid growth in the oil industry in the province. More recently, the Cold Lake development has opened the door to future extraction of heavy crude oil using steam-injection technology to tap such resources.

As the service centre for the area, Lloydminster has offices of the provincial and federal governments serving social and business needs in the surrounding community. Major employers in Lloydminster include the Husky Oil Refinery, Nelson Manufactured Homes, Domtar, Dome Petroleum, Universal Industries (Oil Batteries), Grief Containers and United Oilseed Products Limited.

Several new developments, including Husky's Oil Upgrader facility, a new $21 million hospital, and a major urban park, are expected to create extra employment and income over the next couple of years, thus continuing Lloydminster's consistent growth pattern in future.

Transportation Facts

General

Population Alberta*	9,226
Area *(acres)*	6,265
Density *(people per acre)*	2.40

Roadways

Major Continuous Corridors *(km)*	n/a
Arterials *(km)*	24.9
Local and Collector Roads *(km)*	91.5
Alley Ways *(km)*	22.4
Passenger Vehicles Registered	8,665

See page 99 for dotes and sources of data.

** total population for Lloydminster is 15,214.*

Transportation Planning

The City of Lloydminster transportation study of 1980 presented a plan to meet Lloydminster's future roadway requirements up to a population of 41,000. It also presented recommendations regarding the existing senior citizen and handicapped transit services in the city. In accordance with this plan the City of Lloydminster in recent years has concentrated its roadway expenditures on the extension and upgrading of 52 Street, initially between 50 Avenue and 59 Avenue. This thoroughfare provides a continuous east-west truck route between 62 Avenue and 40 Avenue, while the future extension of 62 Avenue north to 62 Street will provide access to the developing industrial area in the northwest part of the city. The City of Lloydminster's recent transportation system bylaw is #6-83 having received provincial Order-in-Council in July of 1983.

Roadways

Lloydminster has recently completed a new designated truck route in the north of the city. This route is designed to remove heavy vehicles from arterials closer to the central business district and to facilitate the movement of through traffic. Because of the city's location on the provincial border, some of the works along Highway 17 (50 Avenue) were funded by both the Province of Alberta and the Province of Saskatchewan.

Arterial Roadways Construction and Upgrading

PROJECT	LIMITS	YEARS
1. Highway 16	50 Avenue to 52 Avenue	1978, 1979, 1980
	53 Avenue to 59 Avenue	1979, 1980
2. 52 Street	50 Avenue to 55 Avenue	1979, 1980
	59 Avenue to 62 Avenue	1981, 1982, 1983
3. 62 Avenue	CNR Crossing to 52 Street	1981, 1982, 1983

Table 11

Funding for the City of Lloydminster
1979/80 to 1984/85 *(in "000"s)*

Program	1979/80 *(Actual)*	1980/81 *(Actual)*	1981/82 *(Actual)*	1982/83 *(Actual)*	1983/84 *(Actual)*	1984/85 *(Estimated)*	Total
1. Arterial Roadways Capital	$780	$488	$596	$264	$581	$2,395 (A)	**$5,104**
2. Public Transit Capital	55	55	55	55	55	55	**330**
3. Transportation Systems Management	10	17	21	25	25	21	**119**
4. Major Continuous Corridors	0	0	0	0	0	0	**0**
5. Rwy/Hwy Grade Separations	0	0	0	0	0	0	**0**
6. Urban Signing Project	N/A	N/A	7	27	N/A	N/A	**34**
7. Public Transit Operating	15	17	18	18	18	18	**104**
8. Primary Highway Maintenance	32	35	42	48	48	48	**253**
9. Research & Development	16	6	0	2	0.3	2 (B)	**26.3+**
Total	**$908**	**$618**	**$739**	**$439**	**$727.3**	**$2,539**	**$5,970.3**

(A) Includes $1.825 million special assistance for Highway 16.

(B) Allocation to date; not necessarily final grant (dependent on city's claims).

City of Medicine Hat

ROAD CLASSIFICATION

Major Continuous Corridor

Freeway

Expressway, Arterial

Collector

BASE MAP PREPARED BY ALBERTA BUREAU OF SURVEYING AND MAPPING

EDMONTON, ALBERTA © 1984

Location

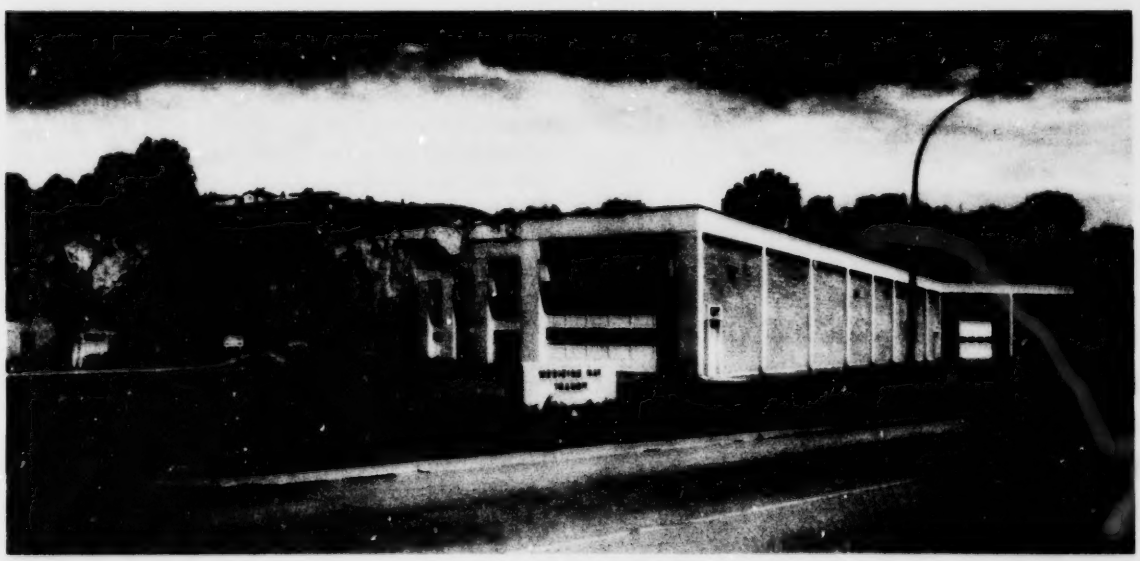
Medicine Hat, named after an old Indian battle, is located in the south of Alberta on the South Saskatchewan River, east of Lethbridge. The city is on the Trans-Canada Highway and is the eastern terminus of the Crowsnest Trail.

Economic Activities

The City of Medicine Hat is home to a variety of enterprises in the ceramic, petrochemical and tire industries. Since its founding, 100 years ago, Medicine Hat has had a strong ceramics industry. One of the original firms in this industry was Medalta — the first company west of Thunder Bay to send manufactured goods to eastern Canada. Today, Medicine Hat producers make building tiles, bricks, sewer pipes, sanitary ware, insulators, and electric porcelain, as well as other products. Over 300 people are employed by the Medicine Hat ceramics industry.

The petrochemical industry in Medicine Hat employs about 1,000 people. Companies active in this field include Alberta Gas Chemicals, Canadian Fertilizer, Cancarb and Catalyst Recovery Canada Ltd. Unlike other cities, Medicine Hat owns its own gas fields and energy distribution system, which are used to provide gas and electricity to Medicine Hat users. Goodyear Tire has a plant in Medicine Hat which produces tires for cars, trucks and agricultural machinery. Opened in June 1960, the factory employs about 110 people and is the only such facility west of Toronto. Medicine Hat is also the service centre for south eastern Alberta, with surrounding agricultural areas producing grains, meat, flax and other products.

There are long established Milling and Greenhouse industries around Medicine Hat. Employment in these industries is comparable to that in manufacturing.



Medicine Hat Transit Garage, built in 1979 using funds provided under the Public Transit Capital Program, has the capacity to accommodate 40 buses.

Transportation Facts

General

Population	41,493
Area *(acres)*	16,425
Density *(people per acre)*	2.45

Roadways

Major Continuous Corridors *(km)*	10.9
Arterials *(km)*	45.3
Local and Collector Roads *(km)*	244.9
Alley Ways *(km)*	142.8
Passenger Vehicles Registered	32,743

Transit

Buses/Trolleys	18
Routes	11
Revenue Passengers	1,261,132
Revenue Vehicle *(km)*	1,055,500
Revenue Vehicle *(hrs.)*	50,800
Available seats	828
No. of Employees	41
Fuel Consumption *(L)*	510,056
Local Fare	0.50
Cost per passenger	1.18
Operating Revenue	443,010
Operating Cost	1,579,032
Revenue/Cost ratio	0.28

See page 99 for dates and sources of data.

Transit

The Medicine Hat Transit System operates both regular public transit services and school-busing under contract from the Medicine Hat Public School Board. Both services are provided by one integrated management structure, sharing physical plant and resources, including the Spencer Street bus garage. On-street operations are, however, segregated in order to better identify and control the costs of moving students and to fully utilize the lower-cost sixty-six seat school buses, while offering standard transit bus service to riders paying the regular fare.

Scheduled transit services are offered on eleven routes throughout the city. Of these, ten operate between 0645 and 2215, Monday to Saturday on a constant thirty minute headway. The other route is operated for 1½ hours each weekday. Of the eleven routes, eight meet at the downtown transfer terminal at a quarter-to and a quarter-past the hour. On the hour and the half hour, two other routes acting as feeders in the south part of Medicine Hat meet at the Southridge transfer terminal with the downtown oriented bus. These feeders begin fifteen minutes before and end fifteen minutes after the other services. In 1983, the City of Medicine Hat undertook a review of its transit operation's, (including maintenance and routing) as part of its current transportation study. As a result of this review several important changes have been made to the transit service to increase its efficiency and its effectiveness.

Transportation Planning

The transportation system bylaw governing Medicine Hat's urban transportation planning and development is Bylaw #1978 which was adopted by City Council on May 5, 1980, and which received the required provincial Order-in-Council (#598-80) on June 25, 1980. The city bylaw adopting Medicine Hat's General Municipal Plan (#1942) was passed by City Council on December 3, 1979. This plan projects steady population increases between 1980 and the year 2000. To accommodate these increases, the city will further upgrade its urban transportation system, both roadways and transit.

The last major transportation planning studies covering transit and roadways issues in Medicine Hat were the Traffic Planning Study (1977), the Public Transportation Study (1976) and the North-East Sector Transportation Study (1980). The city has largely followed the recommendations of those reports.

A 1983 transportation study funded under Alberta Transportation's Urban Transportation Program identified transportation needs for population levels of 58,000 (10 years ahead) and for 76,000 (20 years ahead). The study recommended actions designed to better utilize the existing road system, with special reference to localized problem areas such as the intersection of Kingsway and South Railway Street. A plan for both short and longer term expansion of the city's roadways was developed. Finally the city's transit operation was reviewed to suggest means of rationalizing service and optimising financial performance on individual routes. The city has developed an updated transportation plan and bylaw to replace those now in force.

Roadways

Roadway construction and traffic flow in Medicine Hat is complicated by the existence of a series of natural barriers to transportation including the Kin Coulee, the South Saskatchewan River and Seven Persons Valley. These features necessitate greater investment in bridge building and earthworks than in other cities, thereby increasing the costs of road works in Medicine Hat.

One of the largest roadway projects in Medicine Hat to date is the upgrading of the Trans-Canada Highway through the city under the Major Continuous Corridors Program. Additional information is found on page 91-92.

Arterial Roadways Construction and Upgrading

PROJECT	LIMITS	YEARS
1. Dunmore Road	Spencer Street to 13 Avenue S.E. 29 Street to south city limits Installation of traffic signals	1978 1979 1982
2. Highway 3	10 Avenue to south city limits	1980
3. Maple Avenue	1 Street S.E. to Allowance Avenue	1981, 1982, 1983
4. Southview Drive	Installation of traffic signals	1982
5. 6 Avenue S.E.	Installation of traffic signals	1982
6. College Avenue	College Drive to Trans-Canada Highway	1983

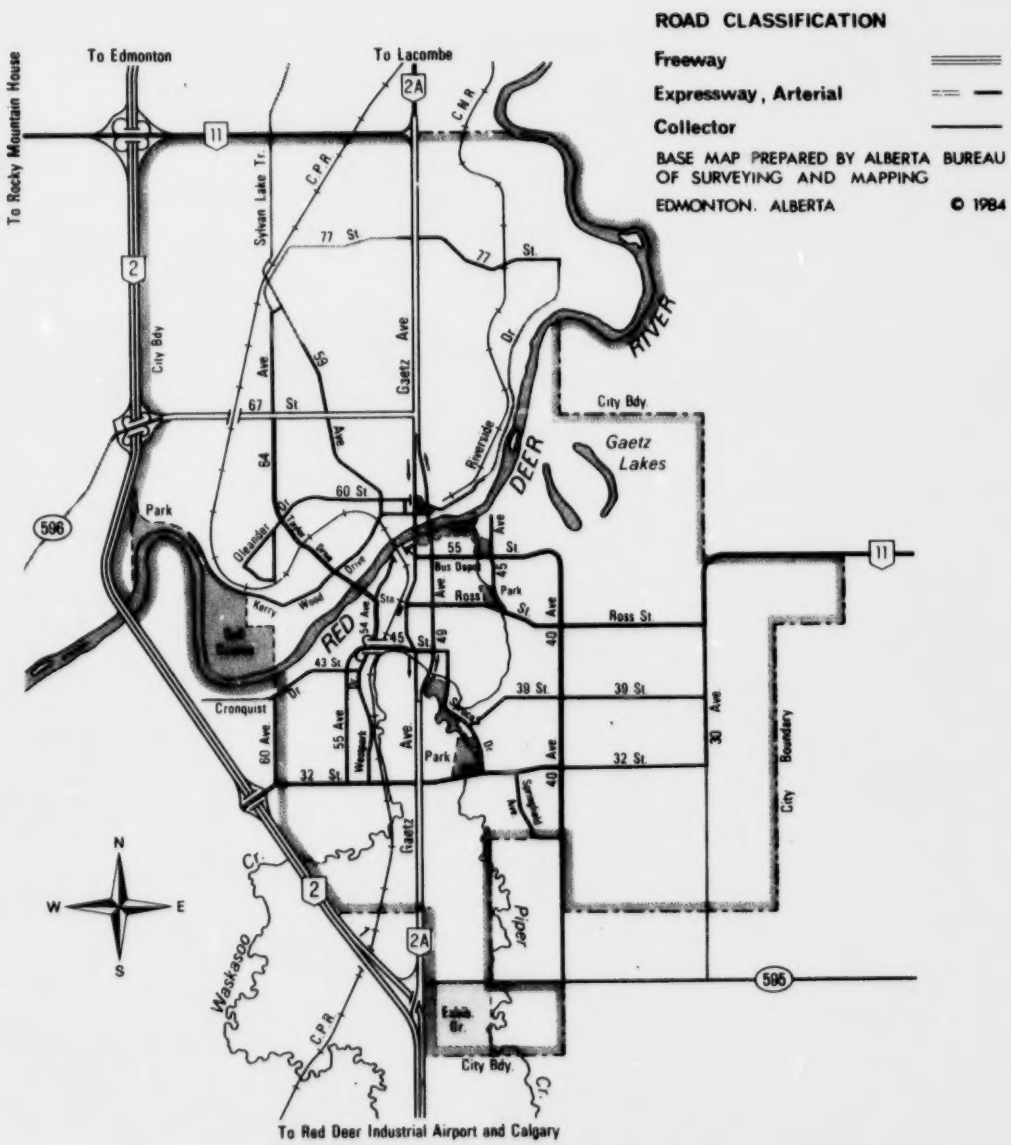
Table 12

Funding for the City of Medicine Hat
1979/80 to 1984/85 *(in "000"s)*

Program	1979/80 *(Actual)*	1980/81 *(Actual)*	1981/82 *(Actual)*	1982/83 *(Actual)*	1983/84 *(Actual)*	1984/85 *(Estimated)*	Total
1. Arterial Roadways Capital	$1,500	$1,700	$1,950	$2,200	$2,200	$2,350	**$11,900**
2. Public Transit Capital	267	297	327	358	387	417	**2,053**
3. Transportation Systems Management	51	84	101	114	114	101	**565**
4. Major Continuous Corridors	3,437	3,300	2,692	5,514	9,717	0	**24,660**
5. Rwy/Hwy Grade Separations	0	0	0	0	0	0	**0**
6. Urban Signing Project	N/A	N/A	30	96	N/A	N/A	**126**
7. Public Transit Operating	273	283	359	399	404	415	**2,133**
8. Primary Highway Maintenance	63	70	103	117	130	130	**613**
9. Research & Development	0	0	0	31	26	6 (A)	**63**
Total	**$5,591**	**$5,734**	**$5,562**	**$8,829**	**$12,978**	**$3,419**	**$42,113**

(A) Allocation to date; not necessarily final grant (dependent on city's claims).

City of Red Deer



Location

The City of Red Deer is strategically located midway between Edmonton and Calgary on provincial Highway 2. Red Deer is served by both Canadian National and Canadian Pacific Railways. The Red Deer River, after which the city was named, passes through the urban area.

Economic Activities

The City of Red Deer is a major service centre for primary industry in central Alberta. It supports agricultural and oil industry development in the area with a range of government infrastructure and secondary industrial concerns. Major Red Deer industries include meat-packing, dairy products, oilfield supply, soft-drink manufacture, metal fabrication, brewing and farm supply.

Other products made in Red Deer are: drilling rigs from National Supply; sub-surface oil pumps from Quinn Oilfield supply; transformers from Federal Pioneer; fire-fighting equipment from Superior Emergency Equipment; food and beverage cans from American Can of Canada; business forms, made by Moore; and recreation trailers from Travelaire Trailer Canada Ltd.

The city is served by both the Canadian National and Canadian Pacific Railways, Calgary to Edmonton lines. It has an industrial airport and well developed intercity coach and trucking services.

Aerial view of the Taylor Bridge completed in 1979, the most westerly of three river bridges in Red Deer.

Transportation Facts

General

Population	50,257
Area *(acres)*	14,080
Density *(people per acre)*	3.45

Roadways

Major Continuous Corridors *(km)*	n/a
Arterials *(km)*	53.4
Local and Collector Roads *(km)*	215.25
Alley Ways *(km)*	129.7
Passenger Vehicles Registered	40,548

Transit

Buses/Trolleys	27
Routes	4
Revenue Passengers	1,524,123
Revenue Vehicle *(km)*	1,068,073
Revenue Vehicle *(hrs.)*	—
Available seats	1,326
No. of Employees	40
Fuel Consumption *(L)*	549,060
Local Fare	0.75
Cost per passenger	1.09
Operating Revenue	780,876
Operating Cost	1,660,391
Revenue/Cost ratio	0.47

See page 99 for dates and sources of data.

Transportation Planning

The City of Red Deer completed a comprehensive transportation study in 1982. This study presented plans for the city's future roadway needs to a population level of 115,000. It made recommendations on routing, downtown parking, and roadway standards. In addition, it integrated findings of the Red Deer Transit Study. These included future construction of a downtown transit terminal, and adjustment of transit routes, fares, and service standards.

There are two major traffic problems addressed by the Red Deer plan. The first is a need to increase future traffic capacity across the Red Deer River by adding a new bridge at 67 Street and, ultimately, by expanding the capacity of the Taylor Bridge. Heavy traffic flows on Red Deer's bridges are generated by the separation of residential growth areas in the southeast section of the city and industrial growth areas in the northwest. The second is the barrier to east-west traffic movement created by the north-south CP Railway line through the city. The relocation of the downtown rail yards and the mainline track are currently under study. Red Deer's present transportation system bylaw is #2814/83 which received Order-in-Council on June 29, 1983.

Transit

Red Deer Transit operates an all-bus transit service within the city. There are four routes, served by buses on a thirty minute headway during off-peak and a fifteen minute headway during peak hours. Service is offered between 0600 and 2200, Mondays through Saturdays. The property also operates 12 school buses on a charter basis for the Red Deer Public School Board.

Since 1981, Red Deer Transit has implemented a series of operational improvements designed to reduce budgetary deficits and to gain greater public confidence in transit service. The major changes implemented include a revision to a radial service pattern centering on the central business district, a reduction from six to four routes, an increase in headways and a decrease in evening services. This lead to a decline in bus-hours operated from 269.5 hours to 154.2 hours per day, thus reducing pressure on the entire system, especially on the maintenance function.

Roadways

Highway 2, the main north-south route between Edmonton and Calgary, runs along Red Deer's west city limits. The position of this highway allows through traffic to bypass Red Deer, therefore not adding to traffic congestion on Gaetz Avenue, the main north-south arterial in the city. Red Deer's river valley location necessitates a series of road bridges. The city now has three bridges, the last of which was completed in 1979 under the Alberta Urban Transportation Program. The city undertook a Fourth River Crossing Study in 1980 to evaluate the need for a new bridge or bridges in the next ten years.

As a result of this study, the city is now planning a new bridge on 67 Street which will alleviate the traffic flow problems between the industrial northwest and the residential southeast of the city.

Arterial Roadways Construction and Upgrading

PROJECT	LIMITS	YEARS
1. 32 Street	Sifton Avenue to 130 m east	1978
	Quarter line section 10 to 30 Avenue	1980, 1981
2. Taylor Drive	Red Deer River Bridge	1978, 1979, 1980, 1983
3. Gaetz Avenue	30 Street to south city limits	1979, 1980
	71 Street to 77 Street	1980
	30 Street Access	1980
	35 Street to 37 Street	1981
	55 Street to 59 Street	1981
	67 Street intersection	1981
	Red Deer River Bridge	1983
4. 64 Avenue	67 Street to Oleander Drive	1979, 1980
5. Ross Street	Quarter line section 15 to 30 Avenue	1980, 1981
	30 Avenue to Rutherford Avenue	1983
6. 40 Avenue	McBride Cresent to Selkirk Blvd.	1978
7. 51 Avenue	45 Street to 52 Street	1978
8. 67 Street	Gaetz Avenue to 160 m east	1979
	Pamela Avenue	
9. 77 Street	58 Avenue to east of CPR	1982, 1983
	Gaetz Avenue to 58 Avenue	1981
	52 Avenue to 58 Avenue	1983
10. 49 Avenue	54 Street to 59 Street	1981
	Intersection on one-way couplet	1981
	Red Deer River Bridge	1983
11. 30 Avenue	Ross Street to 32 Street	1982
12. 32 Street	Quarter line section 10 to 30 Avenue	1982
	49 Avenue to 51 Avenue	1983

Table 13

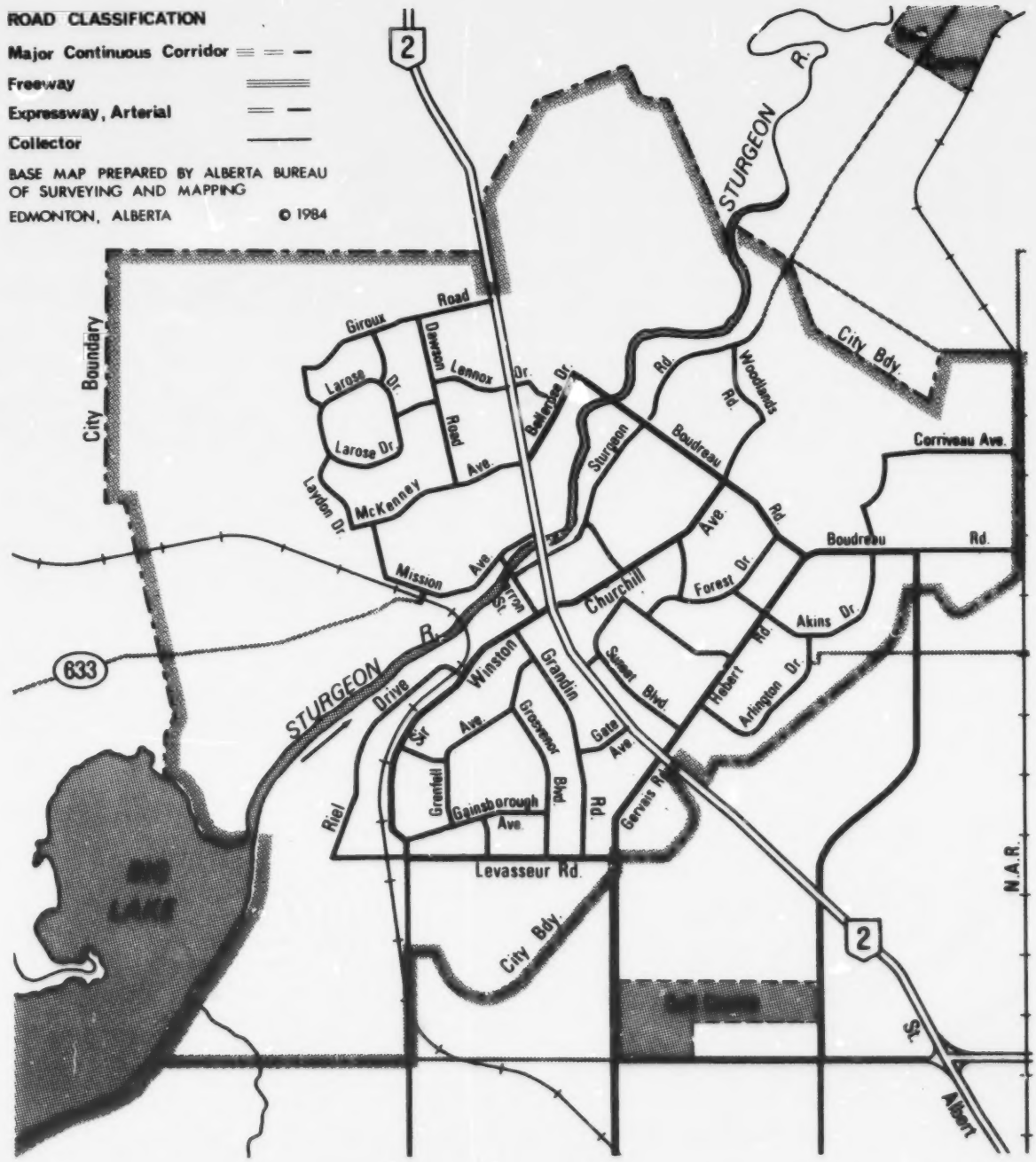
Funding for the City of Red Deer 1979/80 to 1984/85 *(in "000"s)*

Program	1979/80 *(Actual)*	1980/81 *(Actual)*	1981/82 *(Actual)*	1982/83 *(Actual)*	1983/84 *(Actual)*	1984/85 *(Estimated)*	Total
1. Arterial Roadways Capital	$1,650	$1,850	$2,230	$6,813 (A)	$2,540	$2,600	**$17,683**
2. Public Transit Capital	292	322	352	382	412	442	**2,202**
3. Transportation Systems Management	55	93	111	127	127	111	**624**
4. Major Continuous Corridors	0	0	0	0	0	0	**0**
5. Rwy/Hwy Grade Separations	0	0	0	0	0	0	**0**
6. Urban Signing Project	N/A	N/A	35	39	N/A	N/A	**74**
7. Public Transit Operating	295	310	409	454	486	503	**2,457**
8. Primary Highway Maintenance	56	67	86	98	99	87	**493**
9. Research & Development	8	28	151	9	4	26 (B)	**226**
Total	**$2,356**	**$2,670**	**$3,374**	**$7,922**	**$3,668**	**$3,769**	**$23,759**

(A) Includes $4,273,000 special assistance provided for Gaetz Avenue, and 49 Avenue Bridges.

(B) Allocation to date; not necessarily final grant (dependent on city's claims).

City of St. Albert



Location

The City of St. Albert is located on the Sturgeon River immediately adjacent and northwest of Edmonton. It is linked to Edmonton by the St. Albert Trail, 149/156 Sts., 170 St., 184 St. and Campbell Road. The Canadian National Railway serves St. Albert.

Economic Activities

The City of St. Albert is the sixth largest city in the province and one of the fastest growing. Over the period 1971 to 1983, the population of St. Albert increased by over 200%.

St. Albert is served by the Canadian National Railway and is close (5 km) to the Edmonton Municipal Airport. There are several major industrial parks within the city limits including the municipally owned and developed Campbell Industrial Park and the privately developed Riel and Campbell South Business Parks.

Major employers have located within St. Albert over the past five years including the ALCB warehouse and office building, valued at $60 million and constructed on thirty-three acres of land. In addition to the ALCB, major St. Albert employers include Standard General Construction, Vulcan Industrial Packaging, Associated Kellogg Engineering and Pro-Western Plastics. These employers provide over five hundred jobs. Service employers in St. Albert include Trans-Alta Utilities, the Sturgeon General Hospital, and the city government.

Boudreau Road during construction. This is a major arterial running northwest to southwest in St. Albert.

Transportation Facts

General

Population	35,032
Area *(acres)*	8,797
Density *(people per acre)*	3.71

Roadways

Major Continuous Corridors *(km)*	4.1
Arterials *(km)*	43.7
Local and Collector Roads *(km)*	123.7
Alley Ways *(km)*	6.6
Passenger Vehicles Registered	22,221

Transit

Buses/Trolleys	23
Routes	11
Revenue Passengers	550,000
Revenue Vehicle *(km)*	893,000
Revenue Vehicle *(hrs.)*	43,000
Available seats	1,127
No. of Employees	1
Fuel Consumption *(L)*	n/a
Local Fare	0.55
Commuter Fare	1.35
Cost per passenger	3.06
Operating Revenue	650,000
Operating Cost	1,870,000
Revenue/Cost ratio	0.35

See page 99 for dates and sources of data.

Transportation Planning

The transportation system bylaw governing St. Albert's urban transportation planning and development is Bylaw #16/83 which received the required provincial Order-in-Council on August 31, 1983. The city bylaw adopting St. Albert's General Municipal Plan (#28/77) was passed by City Council on September 6, 1977.

Major industrial and population growth, as well as annexation decisions, have changed St. Albert's municipal boundaries and significantly increased traffic counts on its arterial roads. Two major issues addressed by transportation planning are:

1. How to balance growth between the northwest and northeast sections of the city in order to maximize the use of existing roadway and bridge capacity in the city and minimize the construction of new transportation facilities.
2. How to reduce the traffic shortcutting and traffic problems in the mission area of the city.

The city transportation plan recommended the initiation of residential development in the northeast of the city now to achieve a more balanced growth between the northeast and northwest sections (i.e., when the city reaches 50,000 population the target for the northwest sector is less than 15,000 and when the city reaches 70,000 population, the northeast sector should be about 9,000). It was also recommended in the recent plan that the city should upgrade Mission Avenue to a four lane arterial and that the downtown Perron Street Bridge should be upgraded from a two lane to a four lane structure.

Transit

The City of St. Albert is served by St. Albert Transit which offers both local and commuter bus services. Transit buses owned by St. Albert Transit are operated and maintained by Edmonton Transit under contract. During peak-hour surges in ridership, some of the city's local routes are served by school buses operated by Briggs Brothers who also have the school board busing contract.

The property's most heavily used route is the St. Albert Trail commuter service to nearby Edmonton. During the articulated bus demonstration project, St. Albert officials noted the potential of these vehicles for operating commuter services more efficiently than conventional transit buses.[1]

[1] *See page 86.*

Roadways

In the mid 1970s it seemed that St. Albert would become, primarily, a bedroom community of people working in Edmonton. Around that time, City Council had purchased land to develop as the Campbell Industrial Park. The St. Albert Area Transportation Study of 1976 recommended increasing the city's internal employment which would assist in alleviating the development of serious commuter traffic problems.

By both developing St. Albert Transit and upgrading the St. Albert Trail under the Major Continuous Corridor Program, the city is reducing current congestion. By developing employment within city boundaries, the city reduces future traffic problems and also creates a stronger industrial tax base.

Arterial Roadways Construction and Upgrading

PROJECT	LIMITS	YEARS
1. Gervais Road	Grange Drive to St. Albert Road Levasseur Road to Crange Drive	1978, 1979 1979, 1980, 1981
2. Hebert Road	Cunningham Road to Arlington Drive St. Albert Road to Arlington Drive	1978 1980, 1981
3. Sir Winston Churchill Avenue	Cunningham Road to Riel Drive Boudreau Road to Bishop Street Gresham Road to Gatewood Street	1978 1982, 1983 1983
4. Bellerose Drive	Street Albert Road to east city limits Inglewood Road to Boudreau Road	1979, 1980, 1981 1980, 1981, 1982
5. Campbell Road	South city limits to Boudreau Road Poirier Avenue to Boudreau Road	1980, 1981 1979, 1980, 1981, 1982
6. Boudreau Road	SW Churchill Avenue to Sturgeon Road Campbell Road to Hebert Road Sturgeon Road to Bellerose Drive Sturgeon River Bridge	1980, 1981 1980, 1981, 1982 1980, 1981, 1982, 1983 1980, 1981
7. Giroux Road	St. Albert Road to Lodgepole Road	1983

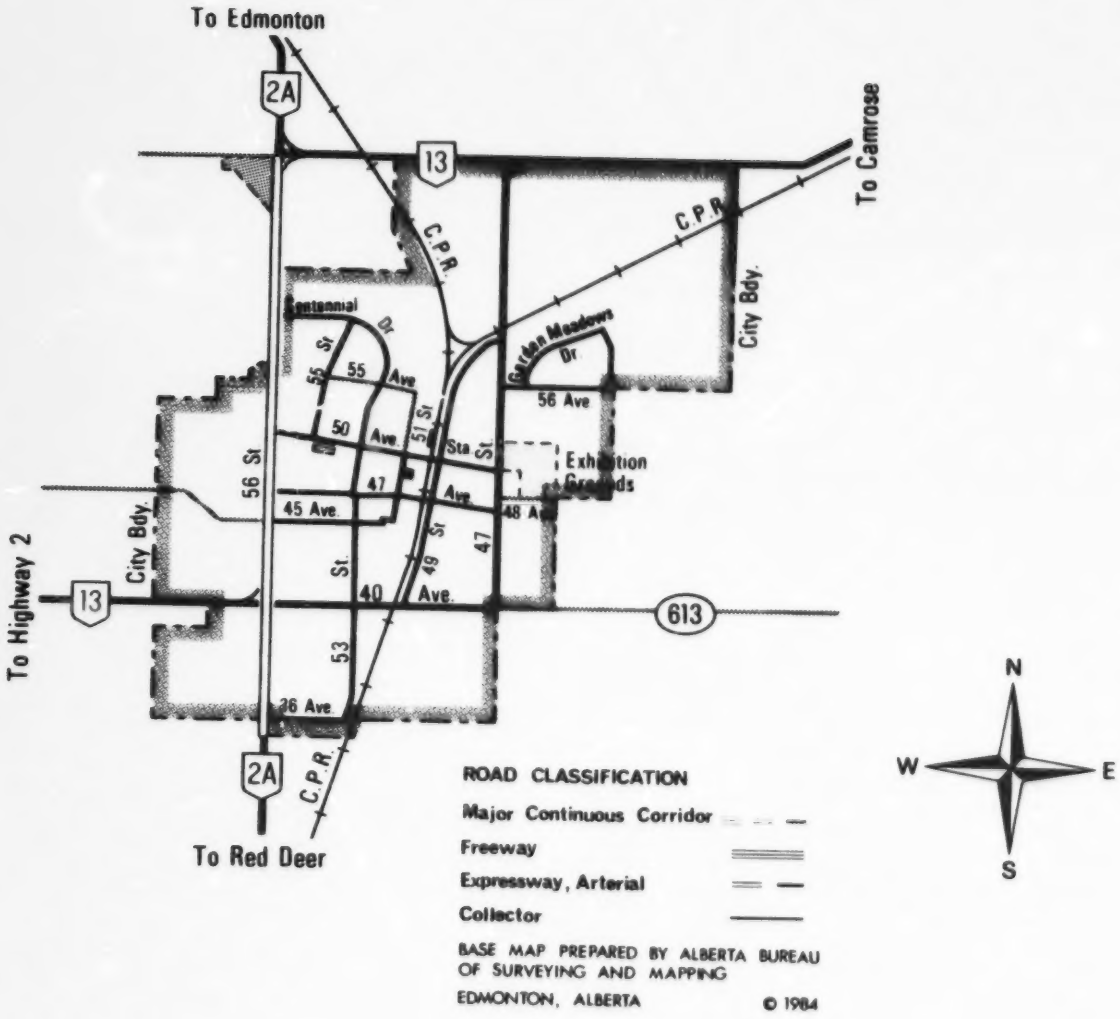
Table 14

Funding for the City of St. Albert
1979/80 to 1984/85 *(in "000"s)*

Program	1979/80 *(Actual)*	1980/81 *(Actual)*	1981/82 *(Actual)*	1982/83 *(Actual)*	1983/84 *(Actual)*	1984/85 *(Estimated)*	Total
1. Arterial Roadways Capital	$1,250	$1,400	$1,800	$2,090	$2,090	$2,074	**$10,704**
2. Public Transit Capital	350	385	415	445	475	505	**2,575**
3. Transportation Systems Management	42	70	83	97	97	83	**472**
4. Major Continuous Corridors	0	1,575	6,950	5,443	5,562	0	**19,530**
5. Rwy/Hwy Grade Separations	0	0	0	0	0	0	**0**
6. Urban Signing Project	N/A	N/A	24	30	N/A	N/A	**54**
7. Public Transit Operating	215	221	281	312	330	350	**1,709**
8. Primary Highway Maintenance	24	27	32	36	51	47	**217**
9. Research & Development	15	0	1	44	0.4	4 (A)	**64.4**
Total	**$1,896**	**$3,678**	**$9,586**	**$8,497**	**$8,605.4**	**$3,063**	**$35,325.4**

(A) Allocation to date; not necessarily final grant (dependent on city's claims).

City of Wetaskiwin



Location

The City of Wetaskiwin is located at the centre of a productive agricultural region, 71 kilometres south of Edmonton on provincial Highway 2A. Wetaskiwin is served by Canadian Pacific Railway.

The downtown area in Wetaskiwin is bisected by the railway yards.

Economic Activities

The City of Wetaskiwin has recently gained a major new employer. Home Hardware Ltd. (the largest company in the Canadian hardware market) has chosen Wetaskiwin as its distribution centre for the whole of Western Canada. This facility, due to open in the spring of 1985, will feature ten acres under one roof. It will be a fully automated operation, intially providing 200 jobs and, later, up to 290. About half of these jobs will go to current Wetaskiwn residents, while the others will bring new residents to the city.

Other companies operating in Wetaskiwin include Dravo of Canada Ltd., Alteen Distributors, Munck of Canada (overhead cranes), Wetaskiwin Manufacturing (truck body manufacturers), Richards-Wilcox Ltd., GranPac Plastics Ltd., C.A.D.P., and Faith Farms Cheese Ltd.

Wetaskiwin is a major service centre for the agricultural, automotive, and oil industries in the area.

Transportation Facts

General

Population	10,022
Area *(acres)*	2,800
Density *(people per acre)*	3.53

Roadways

Major Continuous Corridors *(km)*	3.2
Arterials *(km)*	18.0
Local and Collector Roads *(km)*	60.4
Alley Ways *(km)*	39.2
Passenger Vehicles Registered	9,973

See page 99 for dates and sources of data.

Transportation Planning

The transportation system bylaw governing Wetaskiwin's urban transportation planning and development is Bylaw #912-83 which was adopted by City Council on March 14, 1983 and which received the required provincial Order-in-Council (#364-83) on April 20, 1983. The city bylaw adopting Wetaskiwin's General Municipal Plan (#813-80) was passed by City Council on September 9, 1980.

The 1981 Wetaskiwin Transportation Study outlined the city's expected future road needs to a population level of 25,000 and recommended operational improvements with respect to traffic, parking and the 50 Avenue rail crossing in the downtown area of Wetaskiwin.

Provision for off-street parking facilities, and a grade-separated crossing of the north-south Canadian Pacific Railways line on 50 Avenue were found to be unnecessary in the plan period. Instead, it was recommended the city establish a comprehensive downtown parking policy, and initiate discussions with the railway concerning various means of improving traffic flow across the main rail line.

Other recommendations were made regarding the type and the staging of the future roadway construction and upgrading needed to service residential growth in Wetaskiwin. Much of this residential growth is planned for Northmount, Parkside and Garden Meadows in the northeast of the city. Other recommendations were represented regarding the city's overall roadway network and truck route links.

Roadways

The Highway 2A (56 Street) Major Continuous Corridor is the most important roadway project completed over the last few years in Wetaskiwin. This roadway was designed to provide increased north-south traffic capacity through the city. The other roadway projects recently completed in the city are arterial roadway upgrading and traffic signalization under the Alberta Urban Transportation Program.

Arterial Roadways Construction and Upgrading

PROJECT	LIMITS	YEARS
1. 47 Street	South of 63 Avenue to north of 64 Avenue	1978
	63 Avenue to 64 Avenue	1979
	49 Avenue to 51 Avenue	1980
	64 Avenue to Highway 13 E.	1981, 1982
2. 56 Street	40 Avenue to south city limits	1979
	56 Avenue to 38 Avenue	1978
3. 49 Street	47 Avenue to 65 Avenue	1980
4. 40 Avenue	49 Street to 56 Street	1980
	45 Street to 47 Street	1982
5. 36 Street	56 Avenue to Hwy. 13 E.	1982
	Hwy. 13 E. to Garden Meadows Drive	1983
6. 50 Street	40 Avenue to 47 Avenue	1983
7. 56 Avenue	45 Street to 47 Avenue	1983

Table 15

Funding for the City of Wetaskiwin
1979/80 to 1984/85 *(in "000"s)*

Program	1979/80 *(Actual)*	1980/81 *(Actual)*	1981/82 *(Actual)*	1982/83 *(Actual)*	1983/84 *(Actual)*	1984/85 *(Estimated)*	Total
1. Arterial Roadways Capital	$170	$172	$71[illegible]	$1,325	$0	$612	**$2,992**
2. Public Transit Capital	65	65	65	65	65	65	**390**
3. Transportation Systems Management	12	20	25	29	29	25	**140**
4. Major Continuous Corridors	683	200	947	260	0	0	**2,090**
5. Rwy/Hwy Grade Separations	0	0	0	0	0	0	**0**
6. Urban Signing Project	N/A	N/A	7	26	N/A	N/A	**33**
7. Public Transit Operating	17	18	19	19	20	20	**113**
8. Primary Highway Maintenance	25	37	48	54	53	64	**281**
9. Research & Development	0	0	22	0	0	2 (A)	**24**
Total	**$972**	**$512**	**$1,846**	**$1,778**	**$167**	**$788**	**$6,063**

(A) Allocation to date; not necessarily final grant (dependent on city's claims).

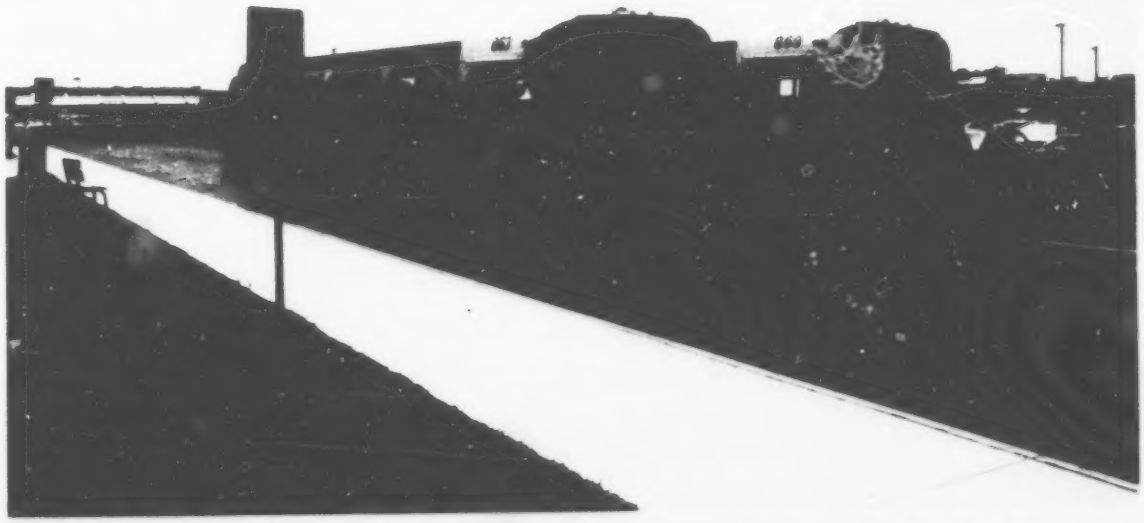
Hamlet of Sherwood Park

Location

Situated in the County of Strathcona #20, the Hamlet of Sherwood Park lies immediately east of the Edmonton city boundary.

Economic Activities

The Hamlet of Sherwood Park is the most densely populated area in the County of Strathcona and is the home of many Edmonton commuters. In January 1982, an area of the county that provided a sizeable portion of its revenue was annexed by Edmonton. This loss of income has spurred the county to go out looking for new businesses to replace those in annexed areas. An economic development committee has been established for this purpose. Because of reduced revenue, expenditures for 1983 on transportation related capital and maintenance were trimmed as part of a fiscal austerity program designed to eliminate a deficit from the county budget.



This Park 'n' Ride lot located at the corner of Fir and Ordze Streets, Sherwood Park, can accommodate 103 automobiles. It provides convenient access for people wishing to commute to Edmonton and/or travel within Sherwood Park on the County of Strathcona Transit System.

Transportation Facts

General

Population	29,700
Area *(acres)*	4,508
Density *(people per acre)*	6.60

Roadways

Major Continuous Corridors *(km)*	n/a
Arterials *(km)*	17.7
Local and Collector Roads *(km)*	119
Alley Ways *(km)*	0
Passenger Vehicles Registered	28,006

Transit

Buses/Trolleys	20
Routes	6
Revenue Passengers	462,849
Revenue Vehicle *(km)*	788,330
Revenue Vehicle *(hrs.)*	28,718
Available seats	960
No. of Employees	44
Fuel Consumption *(L)*	—
Local Fare	0.60
Commuter Fare	1.25
Cost per passenger	4.11
Operating Revenue	485,442
Operating Cost	1,902,352
Revenue/Cost ratio	0.26

See page 99 for dates and sources of data.

Transportation Planning

The most recent overall transportation report relevant to Sherwood Park was the County of Strathcona Transportation Study of 1980. This study addressed planning needs for both roadway development and transit service. The county subsequently decided to commission a two stage study of options for future transit service, specifically, an investigation of the potential costs and benefits of setting up a transit system independent of Edmonton Transit. The preliminary recommendations of the group undertaking this review were tabled before council in the fall of 1983. The County of Strathcona recently updated the 1980 transportation study.

Transit

Sherwood Park is served by the County of Strathcona transit system. The county owns its buses, but contracts with Edmonton Transit to provide operators and vehicle maintenance for the property. The vehicles are owned by the county and leased back to Edmonton Transit for a nominal sum.

Table 16

Funding for the Hamlet of Sherwood Park
1979/80 to 1984/85 *(in "000"s)*

Program	1979/80 *(Actual)*	1980/81 *(Actual)*	1981/82 *(Actual)*	1982/83 *(Actual)*	1983/84 *(Actual)*	1984/85 *(Estimated)*	Total
1. Public Transit Capital	$350	$385	$415	$445	$475	$505	**$ 2,575**
2. Public Transit Operating	199	199	259	292	297	298	**1,544**
3. Research & Development	0	0	0	42	0.5	2 (A)	**44.5**
Total	**$549**	**$584**	**$674**	**$779**	**$772.5**	**$805**	**$4,163.5**

(A) Allocation to date; not necessarily final grant (dependent on city's claims).

Section Three:
Alberta Light Rail Transit

What is it?

Light rail transit, or LRT, is an "intermediate" type of transit system, having a higher passenger carrying capacity than buses, but lower than rapid transit.

Why LRT?

Alberta's two largest cities, Edmonton and Calgary, have experienced a high rate of growth over the last decade. This growth has resulted in more traffic congestion downtown and increased journey times for commuters. There are a number of different ways to relieve such congestion problems. One is to widen existing arterial roads and/or construct new freeways between the suburbs and downtown. This strategy creates a number of disadvantages, such as:

a. Increased consumption of gasoline — a non-renewable fossil fuel;

b. More air pollution and greater noise levels downtown;

c. Large scale land acquisition to provide transportation rights-of-way wide enough for upgraded or new corridors, e.g. the Capilano Freeway in Edmonton — built on a right-of-way 180 metres wide;

d. Significant expense and further social disruption of established neighborhoods when increased demand requires additional road widening.

Edmonton and Calgary, with these factors in mind, decided to develop LRT systems to complement their existing urban transportation facilities. The cities are designing their LRT systems mainly to move daily-commuters from the suburbs to downtown and back, during the morning and evening peak hours. LRT reduces the disadvantages of road improvement programs and offers some signficant advantages both to people who live and/or work downtown, and to the cities' transit properties.

An advantage of LRT over major road improvements is the relatively low right-of-way requirements of the system. The design standard minimum right-of-way requirement for an LRT line in Edmonton is 9.1 metres, a figure which excludes noise reduction or visual enhancement features sometimes provided. This translates into lower property needs and thus lower levels of disruption to homes, businesses, and traffic during construction, than would a four lane road 30 metres in width.

Installing an LRT system is potentially beneficial in increasing the safety of the journey to work. Drivers and passengers in private automobiles are at far greater risk than are riders on an LRT running on exclusive rights-of-way as on Edmonton's Northeast line. This is especially true in the winter months when driving conditions are most hazardous.

The LRT System Versus Bus-Only Transit

The advantages of a light rail transit system operating within a separated or exclusive right-of-way (i.e. with few level crossings), in comparison to a street bus system are:

1. Higher passenger carrying capacities. LRT vehicles, as used in Edmonton and Calgary, can each carry 64 seated and 98 standing for a total capacity of 162 passengers. In comparison, an average 50 foot bus can carry 50 people seated and 25 standing for a total rush hour capacity of 75 passengers.
2. The greater potential for land use development because of the permanence of the LRT system in comparison to a bus system. By example: subway construction in Toronto has strongly influenced the subsequent patterns of urban development in that city.
3. The operating performance of LRT in terms of service reliability and average speed is potentially superior to that of buses since there is less interference from automobile traffic.

4. When peak-hour/peak direction ridership levels are in the order of 6,000 to 7,000 passengers per hour, an LRT line is potentially a less expensive mode of transit than a street bus service over the same route.

There are, however, a few disadvantages associated with light rail transit systems when compared to a street bus system:

1. There is a considerable difference between the total operating/maintenance costs of an LRT vehicle and a bus, e.g. $250.00 per service hour for each LRT vehicle versus $30.00 for each bus (Edmonton Transit 1982 budget figures). These figures exclude financing and depreciation costs.
2. City Transit properties incur much higher capital construction costs when implementing an LRT system than they would with an on street bus system. For example, LRT vehicles cost in the order of $1.3 to $1.4 million each, versus $140,000 to $150,000 for a standard 50 foot bus. Furthermore, buses do not require special tracks, dedicated rights-of-way, or expensive stations. The capital costs of LRT systems range between $10 - $15 million per kilometre for at-grade construction and $60 - $65 million per kilometre for construction underground. Edmonton's LRT stations are costing from $500,000 for above ground construction to $18 million for underground (Corona Station in the Jasper Avenue extension).
3. There is less flexibility to adapt LRT routes to changing land use and ridership levels and patterns. The time required to implement a new LRT route is measured not in weeks, as with a bus route; but in years.
4. Sixty to eighty-five percent of Alberta LRT riders use feeder bus services to get to and from the LRT stations. Consequently, the transit properties have, as yet, not been able to significantly reduce the size of their bus fleets despite the increased traffic capacity provided by the LRT system. The use of feeder buses substantially adds to the total cost of operating an LRT system.
5. New LRT lines typically replace express bus services between suburbs and downtown. Instead of remaining on the one vehicle all the way from home to work, many transit riders will now take a feeder bus to the LRT stations and transfer to an LRT vehicle for the run downtown. This need to transfer from one mode to another can result in increased journey times for passengers who can't "kiss'-n-ride," park their car at the station, or else walk directly to the LRT each day.
6. Some urban residents object to having a street level rail line pass through their community for either safety or community disruption reasons.

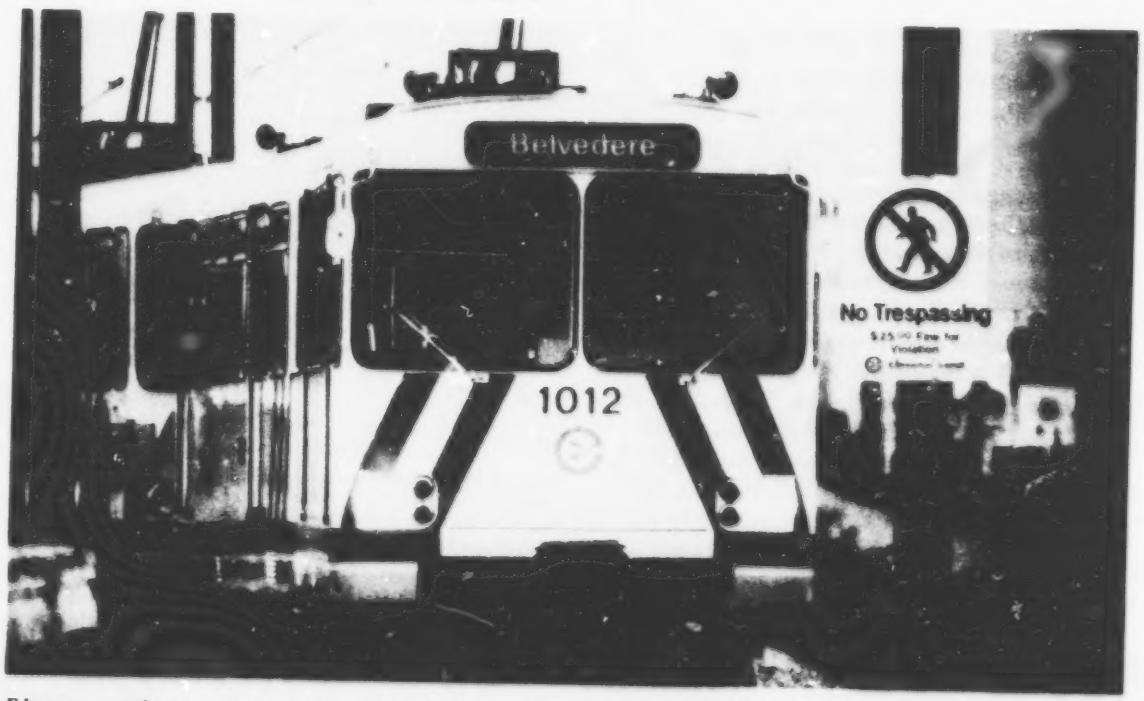
This park 'n' ride facility is located at the Anderson St. terminus of Calgary's South LRT line. It currently has 808 serviced and 500 unserviced (overflow) parking spots, and a kiss 'n' ride area to drop off passengers for the LRT.

Edmonton's LRT System

The initial section of Edmonton's LRT system was constructed between downtown Central Station and Belvedere, in the northeast of the city, between 1974 and 1978. Of the five original stations, two are underground (Central, Churchill) and three are at street level (Stadium, Coliseum, Belvedere). When the line opened in April 1978, it totalled 7.2 kilometres of double track, including 1.6 km underground, on which 17 Siemens-Duwag LRT vehicles ran.

Between 1979 and 1981, the track was extended 2.2 kilometres to the northeast to Clareview station, bringing the total length in service to 9.4 kilometres. The Northeast LRT line follows the alignment of an existing railway corridor, thereby eliminating the need to purchase expensive right-of-way and allowing full separation of LRT and automobile traffic. The work to this stage had cost $75 million. Edmonton finished construction of a 0.9 km, 2 station LRT extension under Jasper Avenue last year. Completed at a cost of $101 million, the new stations ('Bay and Corona') and additional track were opened for service on June 21, 1983. An additional twenty cars had entered service on the LRT system by the fall of 1983.

The existing LRT line now has an average daily ridership of 25,000-30,000 passengers, with a peak-hour/peak direction ridership of around 3,000. Passengers riding the LRT in Edmonton come principally (80-85%) from bus services linked to the LRT station. Other passengers arrive at the LRT stations by walkin g, by "kiss-n-ride" or else take advantage of the approximately 1850 parking spaces provided.



Edmonton currently operates two-car trains on 10.3 km LRT line. A five minute headway is maintained during peak hours and a 15 minute headway at other times. The Northeast LRT line has been in operation since May 1978 and the extended line now has daily ridership of between 25,000 and 30,000 passengers.

Calgary's LRT System

Calgary has been operating its 12.5 km Southern LRT line since May, 1981. From downtown Calgary the line runs along the 7th Avenue Transit Mall and down an existing CPR rail right-of-way to Anderson Road. This line has 16 stations: nine at-grade stations in the downtown area and another seven above ground stations in outlying areas. It uses 27 Siemens-Duwag LRT vehicles operating in three car trains. This line was built between 1978 and 1981 at a cost of $175 million. The South LRT line has an average daily ridership of approximately 40,000 passengers, with a peak-hour/peak direction ridership of about 4,500. Passengers using Calgary's LRT system come to the LRT stations principally by feeder bus (60-65%) and also by walking, and "kiss-n-ride." Approximately 2,000 parking spaces are provided for park-and-ride users of the system.

7th Avenue is an exclusive transit mall in Calgry's downtown area, running 1000 metres from 8th St. SW to 3rd St. SE. Only Calgary Transit LRT trains and buses may use this roadway.

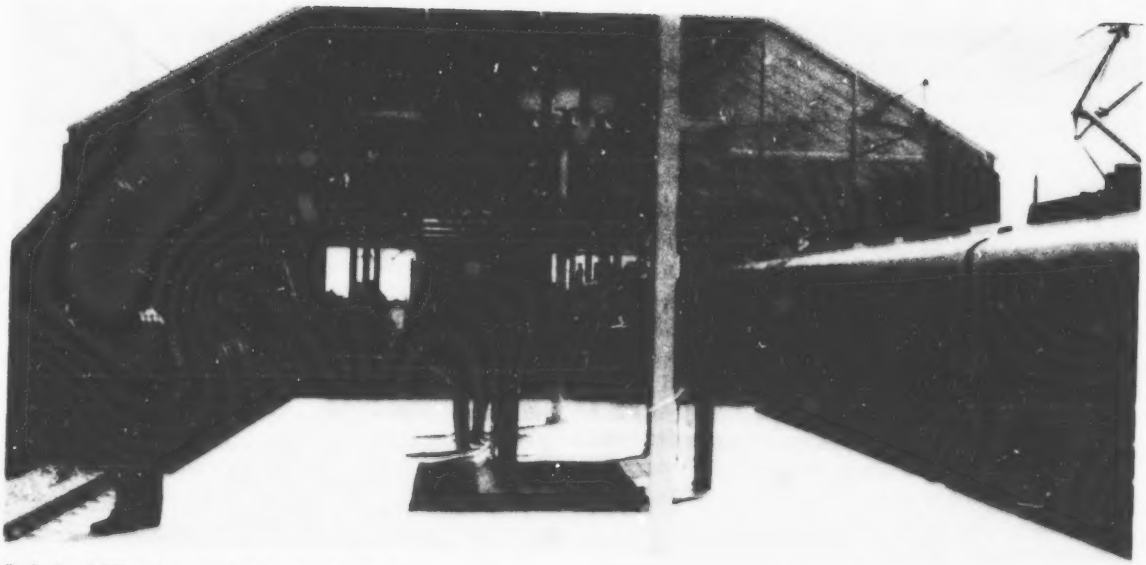
The Future

Both Edmonton and Calgary are planning for future development of LRT services up to the turn of the century. The capital costs of LRT right-of-way purchase, of tunnelling and of initial investment in maintenance and storage facilities are very high. The cities will therefore need to spread expenditures on their systems over an extended period of time, at the end of which an extensive LRT network will be in place.

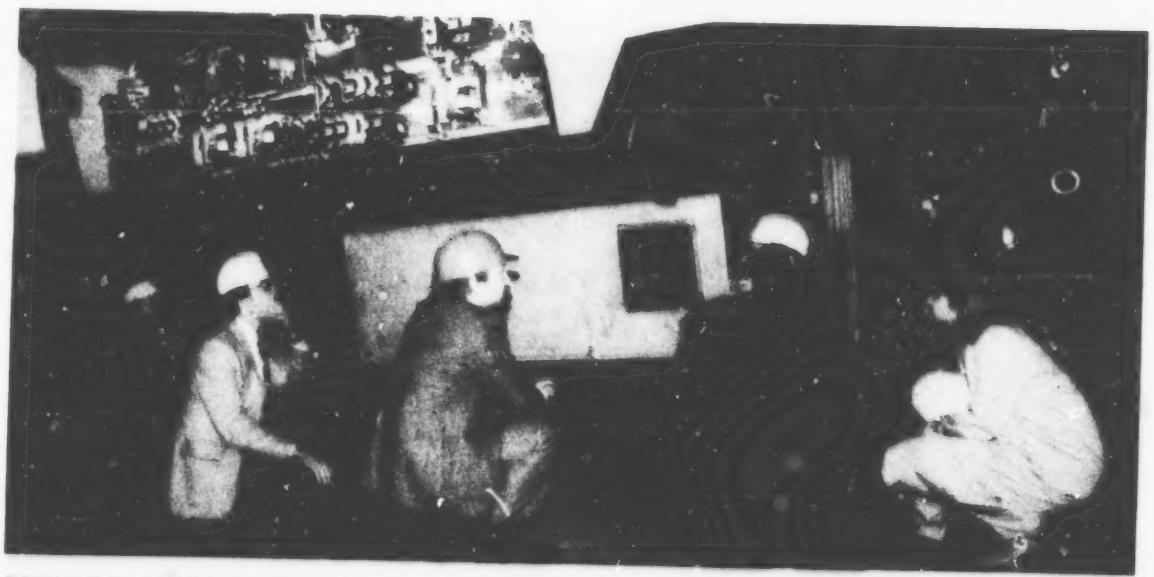
By gradually introducing a rail transit system to serve the downtown, it is anticipated that people will come to prefer to use the rail transit for peak-hour journeys to work and back each day. Such a trend would act to reduce the pressure on downtown thoroughfares and parking facilities and would also save gasoline for the future.

Edmonton eventually wishes to extend its LRT system throughout the city by building Southern, Western, and Northern LRT lines. The City Council has authorized further LRT construction which will take the line from Corona station to a station designed to serve the Government Centre area. Edmonton City Council has also approved plans to extend the south line from Government Centre across the North Saskatchewan River. This scheme is to incorporate a new LRT-dedicated bridge running parallel to the existing High Level Bridge through a short underground section of line to the University. The LRT surfaces south of University Avenue and is planned to proceed down the medians of 111 and 114 Streets to the southern suburbs.

The City of Calgary is working on a 12 km, eight station LRT extension to the northeast, scheduled for completion in 1985 at an estimated cost of $213 million. Forty-eight additional LRT vehicles will enter service on this line and the existing Southern line by 1985. Calgary would like to expand it's LRT system in future to provide Northwest, North and Western lines. The original south line may later be extended to Midnapore.



Surburban LRT stations on Calgary's South LRT line.



Edmonton Transit's LRT vehicles were stored and maintained at the old Cromdale LRT facility. Space was available to store up to sixteen vehicles, which included space for four vehicles under maintenance, at any one time. In the picture above, staff of the Urban Transportation Branch of Alberta Transportation inspect a new LRT vehicle recently delivered from Germany. In January 1984, this operation was moved to the new D.L. Macdonald Transit Yards.

Transportation Services for the Handicapped

Who Are the Transportation Handicapped?

Any individual who experiences mobility problems as a result of a temporary or permanent physical impairment is considered to be transportation handicapped. The number of transportation handicapped persons in urban areas has been estimated at about 5% of the population.[1] Common difficulties experienced by the transportation handicapped include: seeing, hearing, walking, sitting, getting up and climbing stairs. Of the transportation handicapped population, approximately 6% are confined to wheel chairs (i.e., .03% of the total population).

Options for Travel

The primary mode of transportation for the handicapped is the private automobile. Those who do not have access to a car either as a driver or as a passenger must rely on walking, taxis, or some form of transit service. Two forms of urban transit may be available to the transportation handicapped:

1. A regular fixed route, public transit service which may or may not have buses equipped with wheel chair lifts and tie-downs, or
2. A separate transportation system which is specifically equipped for the needs of transportation of the handicapped and is generally characterized by a demand responsive, door-to-door service. This separate system is run 'parallel' with a regular transit system and is part of a paratransit system.

These two systems offer different solutions to the mobility problems of the disabled. A fully accessible public transit fixed-route system allows the transportation handicapped access to all points serviced by the system. In addition, use of the public transit service allows the integration of the transportation handicapped into the mainstream of society. However, the accessible fixed-route transit system does not eliminate any of the difficulties experienced by a majority of the handicapped *prior* to boarding the system. Getting from home to a transit stop and then waiting may be even more difficult than boarding, riding and alighting from a normal transit vehicle. The cold and snow of an Alberta winter accentuate the problems of the transportation handicapped trying to use a fixed-route mass-transit system.

Conversely, a demand responsive transit service which provides a door to door service eliminates the barriers encountered getting to the bus stop. Most of these services require at least 24 hours notice, eliminating any "on the spur of the moment" activity. While a fixed route transit system (made accessable to the transportation handicapped rider) allows for spontaneous activity, the difficulties experienced by the transportation handicapped in accessing these systems are a major deterrent to their use.

Transportation Rights for the Handicapped

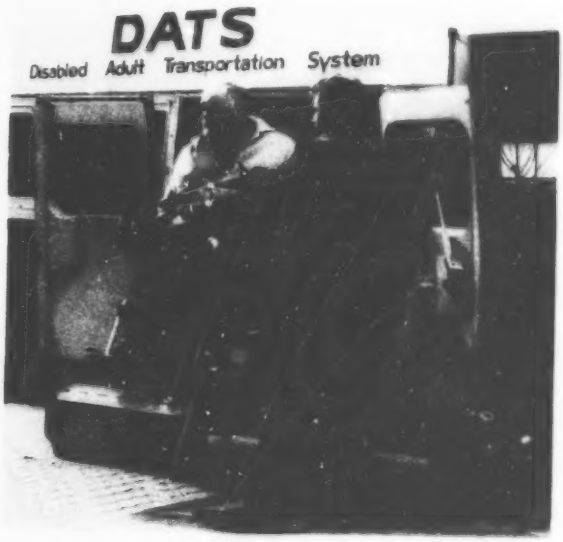
Historically, the lack of adequate living and transportation facilities has restricted the mobility and activity of the handicapped. However, during the last decade the rights of the handicapped have been secured by statute. In the area of transportation rights, the American Government, by way of Regulation 504 of the Rehabilitation Act of 1973, has made it mandatory for all public transit systems to be fully accessible by the year 2001. In Canada, under the Canadian Constitution, the regulations concerning urban transportation services fall within the provincial jurisdiction. In Alberta, the Alberta Human Rights Commission amended the Individual Protection Act in 1980 to include the prohibition of discrimination on the grounds of "physical characteristics." Section 3 of this act specifically prohibits discrimination regarding access to accommodations, services or facilities customarily available to the public.

[1] *Data Base Study for the Interaction and Quantification of Transportation of Handicapped Persons in Canada. Transport Canada - July 1979.*

However, under this Amended Act, the Lieutenant Governor in Council can exempt a "person" or a "class of persons" from this regulation. Under the present legislation, municipalities can apply to be exempt from providing fully accessible transit systems.

Transportation Handicapped Services in Alberta

In Alberta, not all components of the fixed route public transit systems are accessible to handicapped persons. Edmonton's LRT system and the Northeast LRT line in Calgary (under construction) are equipped for use by the handicapped. In Edmonton and Calgary and other Alberta cities, the regular public transit bus services are not specially equipped for the handicapped. However, most Alberta cities have endeavored to provide specialized door to door transit service for seniors and the disabled.



One of the vehicles utilized for transit service for handicapped persons in Edmonton. This service is operated by private contractor for the city and runs 0630 to 2400 seven days a week.

The administrative and operating characteristics of these special services vary from city to city. In Calgary, for instance, the Calgary Handi-Bus Association, a non profit organization, administers and operates the system. In 1982, Calgary Handibuses received 93% of their revenue as a grant from the City of Calgary and 7% from user fees. Calgary City Council's present policy is that users of paratransit services should pay no more than the regular adult fare charged to Calgary Transit riders. This policy may be reviewed in future.

In Edmonton, services for the transportation handicapped are provided by three separate agencies. Adults with a physical handicap are served by the Edmonton Disabled Adults Transportation System (DATS). DATS is managed by Edmonton Transit, which contracts with an independent operator to provide the drivers and the specialized equipment necessary. Physically disabled children up to the age of fifteen are normally provided for by the Edmonton Handibus Association. All mentally handicapped persons requiring special transportation services are provided for by the Edmonton Association for the Mentally Retarded.

Each of the Edmonton organizations have separate funding arrangements. The DATS service is supported by user fees and by the City of Edmonton. The Handibus Association is funded by user fees, United Way and the school boards of Edmonton and surrounding counties (i.e. Sturgeon and Strathcona). The Edmonton Association for the Mentally Retarded is funded solely by user fees. These fees are paid by the school boards for home to school and return trips for those aged seventeen to twenty-four and by the users' (parents) for all other trips.

All these specialized systems have some type of eligibility criteria to register their users. In most cases, it is as general as "any adult who cannot use a regular public transit service in safety and dignity." Funding sources for these transportation services are generally a combination of user pay, private donations and municipal and provincial subsidization.

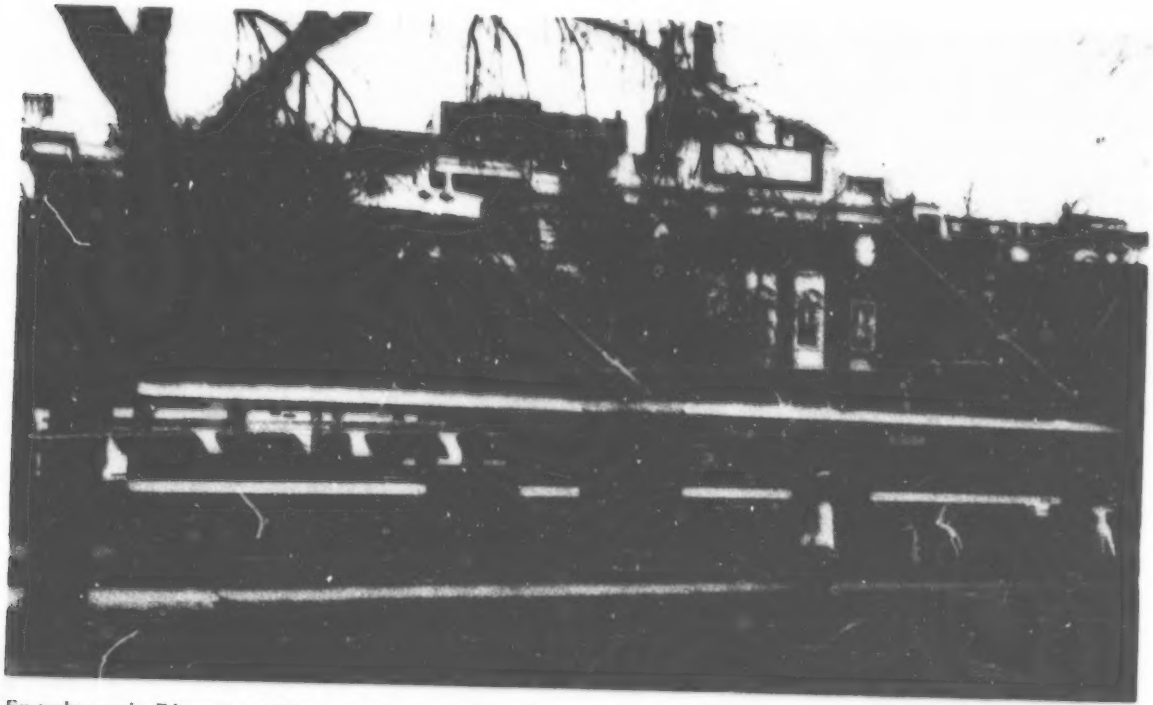
The Government of Alberta provides an unconditional grant of $2.00 per capita (administered by Alberta Transportation) to all municipalities for the provision of specialized service for senior citizens and the disabled. The fact that this grant is unconditional allows the cities the flexibility to spend all or part of the $2.00 per capita on specialized services. This $2.00 grant has been utilized in many different ways. Some smaller towns have used these monies to build wheelchair access ramps to public libraries and/or senior-citizens meeting places. Others have used them to defray the costs of providing specialized transit services, using small passenger vans or other vehicles adapted for safe and comfortable carriage of seniors and/or others with limited mobility.

Urban Transportation Initiatives

As Alberta's urban population increases, so does its demand for transportation services and facilities. Identifying present and future transportation needs and developing innovative solutions to meet them is a task cost-shared by the provincial and individual city governments. Under the Research and Development Program of the previous six year Alberta Urban Transportation Program, 7 million dollars was allocated for both multi-jurisdictional and city specific research projects. Not all innovations have been funded under this program. The implementation phase of Project UNI was funded under the Transportation System Management Program. The City of Calgary's use of Telidon for its transit information system was aided by a 25,000 dollar federal technology dissemination grant. Innovations introduced in Alberta over the past few years follow.

Articulated Bus Demonstration Project

In recent years Edmonton and Calgary have tested three different articulated buses, all from Europe. These were the MAN from Germany, the Volvo from Sweden, and the Crown Icarus from Hungary. The advantage of articulated buses over regular buses is their greater passenger capacity, and hence potentially higher operator productivity. On bus routes which have high peak hour ridership though not yet sufficient to justify LRT, articulated buses can provide a cost efficient means of moving a greater number of passengers with the same number of buses in the same time period. During the in-service articulated-bus demonstration project, Edmonton Transit put these



For twelve months, Edmonton and Calgary operated two articulated buses to test the service and maintenance characteristics of this type of vehicle and its suitability for western Canadian operating conditions. The vehicles used in this test were provided by MAN of Germany and Volvo of Sweden. In another test, a Crown Icarus vehicle from Hungary was evaluated.

buses on many routes including the commuter services from St. Albert and Sherwood Park.

Neither city has gone ahead with purchases of articulated units at this time, due to a fall-off in ridership with recent service cuts and the economic slowdown. Through the Alberta Urban Transportation Research and Development Program, which funded the demonstration projects, all participants have gained new knowledge about the benefits of and the prerequisites for the future introduction of articulated buses.

Telidon

Since May 1982, Canada's federally supported national videotext system "Telidon" has been in use by Calgary Transit. The Telidon system is essentially a two-way video-communications medium, by which information is stored and transmitted as either text, graphics or a combination of both. Calgary Transit uses the system to provide route, schedule and general information for its bus and LRT services throughout the city. The accompanying photo of the Telidon system in operation shows the alignment of Calgary Transit's future Northeast LRT line, presently under construction from the Seventh Avenue transit mall to 39 Avenue N.E.

If it becomes necessary to temporarily reroute a bus, or if a scheduled LRT service is changed, this information can be rapidly passed to the public through the medium of Telidon. All you need to receive Telidon information is a TV set tuned to channel 14.

In order to provide the travelling public with up-to-date information on transit fares, schedules, and routes, Calgary Transit uses the City of Calgary's information service, Civic Channel, which utilizes Canada's unique Telidon technology. Telidon is a videotext system which, in this instance, can provide pages of data to anyone owning a television set hooked into the network. Calgary Transit is one of many city departments which uses Civic Channel to publicize facilities and services.

Project UNI

One of the major innovative urban transportation projects carried out under Alberta Urban Transportation funding was Edmonton's Project UNI. Project UNI was developed by a management team from the City of Edmonton and the University of Alberta as a short-term, low-cost means of resolving traffic flow problems in the 103/104 Street corridor without the need for a major capital works program.

Two principal objectives of the project were: (1) to relieve traffic congestion on the arterial roads in the vicinity of the University; and (2) to decrease the travel time required by the motorists and transit riders to reach the central business district in the morning peak and to leave it in the evening.

Previous traffic studies of the area had all proposed large-scale, capital intensive roadway network expansion including a new thirty million dollar river crossing near the existing 105 Street

bridge as a solution to the problems. Public concerns over the suitability of some of the proposed solutions influenced the Edmonton City Council to consider a new approach.

The Project UNI team was originally formed to devise a transportation system management plan that would alleviate local traffic problems in the short term. At that time, the city intended this transportation system management plan as a temporary answer until either public opposition to the network expansion program, recommended previously, had dissipated or an acceptable alternate expansion program could be developed.

The team at first considered a series of independent traffic control changes. However, since their initial findings showed that all traffic problems in the study area were inter-related, only an integrated approach would prove effective in reducing the traffic congestion. The team identified intersection movements simplification and traffic flow redistribution as the tactics most able to reduce the problem.

After reviewing a number of possible integrated improvements, the team determined that introducing one way approaches on the High Level Bridge could prove necessary. The five legged intersection at the southern end of this bridge was found to be the key intersection in the area. If the High Level Bridge was to become a one-way thoroughfare then it followed that the 105 Street bridge, 400 metres east, must also become one-way, thereby forming a one-way couplet across the North Saskatchewan River valley. Major changes introduced included the elimination of two-way traffic on the 105 Street and High Level Bridges, on the Walterdale Hill Road, on Saskatchewan Drive, on 106 Street and on 105 Street south of the central business district. Replacing a traffic circle with an intersection at the northern end of the 105 Street bridge, and installing an extensive network of computer controlled traffic lights were other important elements of the plan.

The relatively minor physical modifications to the existing roadway network devised by the Project UNI team have greatly increased the peak hour traffic capacity of two of the city's river crossings. At a cost of 4.5 million dollars, these changes have improved traffic flows and the on-time performance of transit services all along the north-south corridors between south Edmonton and the fringes of the central business district.

Mayfield Road Noise Attenuation Barrier

Edmonton's Mayfield Road experimental noise attenuation barrier has been the subject of a long term Research and Development project that began with the provincial government's initiation of the "Alberta Surface Transportation Noise Attenuation Study" in 1974. This study recommended testing the engineering viability, noise attentuation performance and public reaction to the installation of an attenuation barrier. A number of potential sites were investigated by city staff between mid 1976 and the end of 1977. The report documenting this survey recommended the Mayfield Road site. In the spring of 1978, the Transportation Systems Management Department organized an initial meeting with the Mayfield community league to seek the support and co-operation of the neighbourhood which would be getting the experimental barrier. In this period, an opinion poll of local residents and businesses was taken, and later a more detailed survey was completed.

The actions of the city administration in consulting those most affected by the project were appreciated. The community lent its approval and thus a recommendation to go ahead, at the Mayfield Road site, was forwarded on completion of the detailed site study in June 1978. The next month, City Council passed a resolution to proceed and sought Alberta Urban Transportation Research and Development funding for the project. After completion, the city waited for local residents to become accustomed to the barrier, meanwhile carrying out noise level testing, vehicle type surveys, etc.

The main findings of the experimental project were:

1. Residents perceived a significant reduction in neighbourhood noise levels, frequency of annoyance and dissruption of activities. They also cited a decrease in dust, dirt and litter.
2. Of residents within three rows of the barrier, 81% perceived the barrier to be beneficial.
3. Residents felt that the barrier had a minor negative impact on property values, neighbourhood access, crime and aesthetics.
4. As an example of the barriers technical effectiveness, traffic noise levels were reduced by 14.5 dba from 72.5 dba to 58.0 dba measured at the first row of houses. Of this figure 11.5 dba was directly attributable to the barrier and 3% to reduced truck traffic.

This 1490 metre long, 3.4 metre high metal wall on a 1.5 metre berm was built to demonstrate and monitor the effectiveness of such facilities in reducing noise transmitted from a major arterial roadway to residences.

Computer Based Information System for the Urban Transportation Branch

The objectives of this ongoing project are to design, develop and implement a microcomputer based information system for storing, updating, analyzing and retrieving urban transportation and other related information. This system, once implemented, will serve as a major resource to assist the Urban Transportation Branch staff in developing, administering and monitoring the current Urban Transportation Program. Ministerial and other enquires can be handled in a relatively short time frame, accurately and completely.

The types of data to be stored, analyzed and updated by the system now include selected information on:

a) Alberta's Urban Transportation Program — levels and formulas for funding, and the urban transportation programs in other provinces.

b) City projects funded under the programs — city expenditures, provincial grants, and timing.

c) General data on cities — socio-economic and demographic.

d) Different types of transportation plans.

e) Transit and roadway systems in Alberta cities.

f) 1981 transportation needs studies.

Calgary Transportation Planning Model Update

Over the period 1980 to 1983, the City of Calgary has undertaken a major review of its city transportation planning model. This model dates from 1971 and plays a central role in the development and the analysis of roadway and public transit plans and priorities. It does this by assisting the city's planners to predict the future level and direction of travel demand within the city limits on the basis of expected land use development.

The new Calgary transportation planning model update consisted of two key phases. The first phase was data collection and preliminary model development. The second phase saw an assessment of various newly formulated simulation techniques.

In phase one, the city conducted several detailed surveys aimed at ascertaining how, where, and when Calgarians travel. The surveys included taxi and truck surveys, a survey of trips between Calgary and surrounding communities and the questioning of a 10% sample of households to determine the travel patterns of individuals in different areas of the city.

Phase two saw the incorporation of several new techniques to enhance the reliability of travel demand forecasts. This process has resulted in Calgary possessing an up to date morning peak hour city transportation model. The city will use its new model to judge where, when, and the capacity of new roadways and transit routes to be introduced.

Major Continuous Corridors

The Alberta Major Continuous Corridor Program is intended to provide incorporated cities of the province with a high-capacity, trans-urban roadway that will assist in alleviating serious congestion of internal and/or through traffic between city boundaries.

It was developed in recognition of the needs and difficulties encountered by many of Alberta's cities in providing such continuous high-standard routes. This program was introduced in 1977 and later incorporated as part of the six-year Alberta Urban Transportation Program for 1979/80 - 1984/85.

Projects accepted under the Major Continuous Corridor Program are eligible for 90% provincial contribution towards approved shareable costs associated with planning, design, construction and land acquisition, up to a maximum amount specified in the individual province/city Major Continuous Corridor agreement.

The annual grant allocations available under this program for each city are presented in Table 1. Budgeted and projected allocations under the Alberta Urban Transportation Program have been subject to re-examination as part of the Department's biennial adequacy reviews over the six-year period of the program.

A route selected under the Major Continuous Corridor Program must be a continuous roadway link of high standard in the City's transportation system. In order of priority, it should be an urban extension of a provincial primary highway; a route which connects provincial primary highways; or else a part of the city's connection to a primary highway. In addition, the selected route's roadway classification shall not be lower than that of an arterial on the city's transportation system bylaw and the route shall be open for use by all vehicles that may lawfully operate on a primary highway as defined by the Public Highways Development Act. The City Council must concur with and adopt, by resolution, the major continuous corridor route selected.

The first Major Continuous Corridor agreements were signed in 1977 for Calgary's Deerfoot Trail and Edmonton's Yellowhead Trail. Since that time, five other Major Continuous Corridor agreements have been entered into, i.e.: Wetaskiwin's Highway 2A, Medicine Hat's Trans-Canada Highway, St. Albert's Highway 2, Drumheller's Highway 9 and Lethbridge's Crowsnest Trail (Highway 3).

All programmed works have been completed on Calgary's Deerfoot Trail, Wetaskiwin's Highway 2A, Drumheller's Highway 9 and St. Albert's Highway 2. Work is still underway on Major Continuous Corridor projects in three other cities. Edmonton's Yellowhead Trail was officially opened as a continuous facility on November 8, 1982. Finishing, landscaping and other works remain to be completed as Edmonton continues development of this thoroughfare. Medicine Hat's Trans-Canada Highway is now over three-quarters of the way toward completion, while work on Lethbridge's Crowsnest Trail is well underway.

The Yellowhead Trail, a four to six lane corridor, was officially opened on November 8, 1982 and provides a high quality route across the northern part of Edmonton.

The Deerfoot Trail, a four to six lane corridor, was officially opened on November 22, 1982. The Corridor project extended from 17th Avenue S.E. to the south city limits in Calgary.

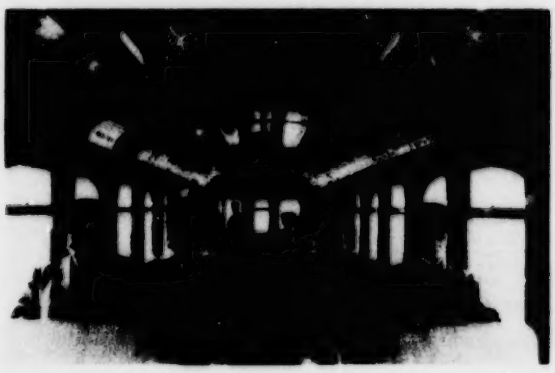
The Trans-Canada Corridor through Medicine Hat has been upgraded to four lanes from the northern city limit to Kin Coulee, with major intersections built at 3rd St. N.W., and the Crowsnest Highway, and a new south direction bridge built across the South Saskatchewan River.

Urban Transportation Historical Perspective

These photographs depict urban transportation in Alberta at various levels between the turn of the Century and the 1950s. The province and the cities have come a long way since the days when some helpful roadbuilder placed a sign on the St. Albert Trail calling on travellers to "make (their) own track."

Back in 1925, road makers put a sign on the St. Albert Trail between Edmonton and St. Albert; it read "Make Your Own Track." The occasion was the laying of an experimental bituminized-earth road surface; the sign requests citizens to help roll the road by avoiding the tracks of earlier vehicles. Credit: Provincial Archives of Alberta.

One of the landmarks of Calgary is the Centre Street Bridge. This scene shows the bridge under construction in 1915. The photo is looking north from the river's edge. Credit: Glenbow Archives, Calgary, Alberta.

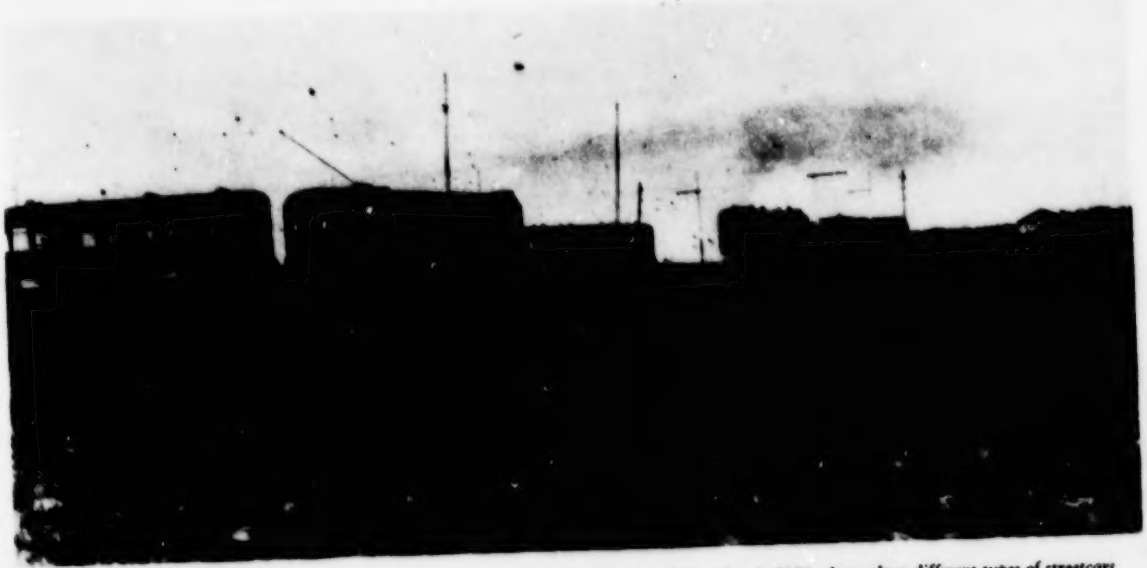


This is a view of the interior of Calgary's first streetcar. The picture was taken in 1909. The four gentlemen in the second row are (L-R) Commissioner S.J. Clarke; Commissioner A.G. Graves; Mayor R.R. Jamieson, and Superintendent T.H. McCauley. Streetcars similar to this one are presently being restored to operating condition by the Edmonton Streetcar Preservation Society.

Credit: Glenbow Archives, Calgary, Alberta.

This scene shows four streetcars of the Lethbridge Municipal Railway beside Galt Park in 1913. It was the low rate of automobile ownership and the slow development of urban roadways which made these early fixed-way transit systems viable.
Credit: Glenbow Archives, Calgary, Alberta.

Calgary Transit operated electric trolley buses between June 1, 1947, and March 8, 1975. In 1957, the city operated over 100 trolleys and a smaller number of diesel buses. The trolleys, which between 1947 and 1950 had progressively replaced the old streetcars, were themselves replaced by additional diesel buses, following a 1974 council resolution.
Credit: Glenbow Archives, Calgary, Alberta.



The Sarcee Military Camp was the site of one of Calgary's streetcar terminals. This photo, taken in 1916, shows three different types of streetcars used on the system at the time. All of these cars were of wooden construction.
Credit: Glenbow Archives, Calgary, Alberta.

Between 1912-1947, Lethbridge operated a streetcar system based at the old streetcar garage between 5th and 6th Streets and 8A Avenue, demolished in 1980. The RCMP are escorting the first streetcar to the city. Credit: Glenbow Archives, Calgary, Alberta.

Wheeling concrete in a wheel barrow while constructing a pier for a bridge over the Red Deer River, Red Deer.

Credit: Provincial Archives of Alberta.

Red Deer has changed a lot since this photo was taken in 1920. At the end of the street is the then busy railway station. It still stands, but today, it is Highway 2, not the Edmonton to Calgary rail line which carries most people to and from Red Deer. Credit: Provincial Archives of Alberta.

Section Four:

Glossary

Arterial Roadway — An arterial street is intended to carry large volumes of all types of traffic moving at medium to high speeds, to serve the major traffic flows between principal areas of traffic generation and also connect to rural arterials and collectors. Arterial streets desirably have no direct access to development.

Bus Lane — A street or highway lane intended primarily for buses, either all day or during specified periods, but which may be used by other traffic under certain circumstances, e.g., making a right turn.

Collector Roadway — A collector street provides both traffic service and land service. The traffic service function for this type of street is to carry traffic between local and arterial streets. Full access to adjacent properties is generally allowed on collectors.

Contraflow Lane — A highway or street lane on which, during certain hours of the day, public transit or other specially designated vehicles operate in a direction opposite to that of the normal flow of traffic on that lane during the remainder of the day.

Expressway — An expressway is a divided arterial street carrying large volumes of traffic without direct access to adjacent development, with interchanges at key intersections, and a limited number of at-grade signalized intersections throughout the remainder of its length.

Freeway — A freeway is intended to accommodate heavy volumes of traffic moving at high speeds under free flow conditions; to serve long trip traffic between large residential areas, industrial or commercial concentrations, to provide optimum mobility for through traffic, while service to adjacent lands is completely eliminated; and, has no parking, unloading of goods, nor pedestrian traffic.

Grade Crossing — A crossing of highways, railroad tracks, other fixed guideways, or pedestrian walks or combinations of these at the same level.

Grade Separation — A separation of intersecting streams of traffic by the provision of crossing structures or underpasses.

Headway — The spatial distance or time interval between the front ends of vehicles moving along the same lane or track in the same direction.

Intersection — The point at which two or more guideways or roadways meet.

Kiss 'n' Ride — The procedure whereby a transit or commuter passenger is driven to his or her first transit terminal point in a private vehicle by another person who then drives the vehicle away from the terminal to another destination (derived from the situation in which a wife drives her husband to the terminal, she kisses him goodbye, he rides the transit system to work, and she drives home or to other destinations).

Light-Rail Transit System (LRT) — An urban transportation system that uses electrically powered rail cars operating singly or in short trains on fixed duo-rail guideways. It may be grade separated, and loads passengers from low or medium height platforms.

Local Roadway — A local street's main function is to provide land access. Direct access is allowed to all abutting properties. It is not intended to move large volumes of traffic.

Median (median strip) — The portion of a divided highway that separates the opposing flows of traffic.

Modal Split — The proportion of total person-trips that uses each of various specified modes of transportation; the process of separating total person-trips into the modes of travel used.

Operating Cost — CUTA definitions used in this booklet "All the expenses incurred as a result of the system operation including lease charges. Depreciation, debentures or interest are *not* included, *nor* are expenses incurred in the operation of school buses in school contract work or expenses associated with inter-urban charter operations."

Operating Revenue — CUTA definition used in this booklet "Revenue derived from passenger services, local charter services, park and ride facilities, and advertising. *Excludes* subsidies, revenue derived from the operation of school buses in school contract work, revenue derived from the operation of inter-urban charters and fare concession payments."

Park 'n' Ride — A procedure that permits a patron to drive a private automobile to a transit station, park in the area provided for that purpose, and ride the transit system to his or her destination.

Revenue Passengers — Single vehicle transit rides by initial-board (originating) transit patrons paying a full fare, a reduced fare, no fare (free fare) or showing a pass. *Excludes* transfer rides or charter rides.

Revenue Services — Line service operation, excluding deadheading or layovers; any service scheduled for passenger trips.

Revenue Vehicle Kilometres — Total distance travelled by revenue vehicles while in revenue service. That is those kilometres incurred along a scheduled route or dial-a-ride service from the first point where passenger may be boarded to the last point where passenger service is terminated. *Excludes* deadhead, charter, maintenance and training kilometres.

Revenue Vehicle Hours — The sum of all vehicle hours excluding deadhead, maintenance, training and charter travel.

Ridership — The number of persons using a transit system within any given period (expressed as hourly, daily, or yearly ridership).

Right-of-Way — The strip of land occupied by or intended for a transportation facility.

1. *Exclusive* - a lane or other facility that is fully grade separated or access controlled and is used only by a specified mode or vehicles at all times.
2. *Exclusive transit* - a right-of-way that is fully grade separated or access controlled and is used exclusively by transit.

Route Kilometres — The sum of the round-trip length of all routes operated, regardless of the number of times certain portions of the streets, highways, or rights-of-way may be duplicated by different routes.

Total Vehicle Kilometres — Total distance travelled by revenue vehicles including deadhead travel, maintenance and training kilometres.

Urban Transportation System — The system of elements that supports the movement of people and goods in a city (e.g., transit services, highways, traffic engineering, and operations), including both private and publicly owned carriers.

Sources of Information

Population:	Alberta Municipal Affairs	(Oct. 27, 83)
Area:	Alberta Municipal Affairs	(Apr. 01, 82)
Density:	Derived Figure; 01/02	(Apr. 01, 82)
MCC:	Urban Transportation Branch Road Needs Study	(Nov. 20, 81)
Arterials:	Urban Transportation Branch Road Needs Study	(Nov. 20, 81)
Roads:	Urban Transportation Branch Road Needs Study	(Nov. 20, 81)
Alleyways:	Urban Transportation Branch Road Needs Study	(Nov. 20, 81)
Vehicles Registered	Solicitor Generals Department	(Feb. 04, 82)
LRT vehicles:	Transit Property	(Dec. 31, 82)
Buses/Trolleys:	Transit Property	(Dec. 31, 82)
Routes:	Transit Property	(Dec. 31, 82)
Revenue Pass:	CUTA "Operating Characteristics of Member Systems 1981-1982"	
Rev. Vehicle km:	CUTA	
Rev. Vehicle hrs:	CUTA	
Available seats:	Transit Property	(Dec. 31, 82)
Number of Employees:	CUTA	
Fuel Consumption:	CUTA	
Power Consumption:	CUTA	
Local Fare:	Transit Property	(Dec. 31, 82)
Commuter Fare:	Transit Property	(Dec. 31, 82)
Cost per Pass:	CUTA	
Operating Rev:	CUTA	
Operating Cost:	CUTA	
Rev/Cost ratio:	CUTA	

The Transit Property (city) was used as the final source if their statistics differed from CUTA. CUTA statistics exclude debt service charges.